Public Document No. 104

The Commonwealth of Massachusetts

ANNUAL REPORT

OF THE

DEPARTMENT OF LABOR AND INDUSTRIES

FOR THE

YEAR ENDING NOVEMBER 30, 1930

PUBLICATION OF THIS DOCUMENT APPROVED BY THE COMMISSION ON ADMINISTRATION AND FINANCE

1M. 4-'31. Order 2110.

CONTENTS

The Commonwealth of Massachusetts

DEPARTMENT OF LABOR AND INDUSTRIES

OFFICIALS.

E. Leroy Sweetser, Everett, Commissioner.
Ethel M. Johnson, Boston, *Assistant Commissioner.*
Edward Fisher, Lowell, *Associate Commissioner.*
Herbert P. Wasgatt, Waban, *Associate Commissioner.*
Samuel Ross, New Bedford, *Associate Commissioner.*

HEADS OF DIVISIONS AND BRANCHES

Board of Conciliation and Arbitration.
Edward Fisher. Herbert P. Wasgatt. Samuel Ross.
Division of Minimum Wage. Ethel M. Johnson, *Acting Director.*
Edward Fisher. Herbert P. Wasgatt. Samuel Ross.
Division of Statistics. Roswell F. Phelps, *Director.*
Margaret Shea, *Statistician for Manufactures.*
Lester E. Archibald, *Statistician for Labor.*
Division of Industrial Safety. John P. Meade, *Director.*
Joseph Monette, *Counsel.*
Division of Standards. Francis Meredith, *Director of Standards.*
Division on the Necessaries of Life. Ralph W. Robart, *Director.*
Massachusetts Industrial Commission.
Bradbury F. Cushing, *Chairman,* Louis E. Kerstein, Andrew Raeburn, Thomas G. O'Hare, Paul E. Fitzpatrick, *Members Ex Officiis,* E. Leroy Sweetser, *Commissioner of Labor and Industries,* Arthur W. Gilbert, *Commissioner of Agriculture.*
Leon M. Lamb, *Executive Secretary.*

PUBLIC EMPLOYMENT OFFICES.

Boston. Everett L. Hanna, *Superintendent.*
Springfield. Chester A. Allen, *Superintendent.*
Worcester. William A. Wilder, *Superintendent.*
Federal Director of Employment Service.
E. Leroy Sweetser, *Commissioner.*

REPORT OF THE COMMISSIONER OF LABOR AND INDUSTRIES

To the General Court:

The eleventh annual report of the commissioner of labor and industries for the year ending November 30, 1930, is herewith submitted. It contains a report of the heads of the several divisions into which the department has been organized and through which the work is accomplished.

A new division was added to the department this year by act of the legislature—chapter 410 of the acts of 1930—to be known as the division on the necessaries of life. This division was formerly an independent commission, created under authority of the legislature of 1919. Briefly stated, the duties of the division are to study and investigate circumstances affecting the prices of the commodities which are necessary to life. It may inquire into all matters relating to the production, transportation, distribution and sale of the said commodities and into all facts and circumstances relating to the cost of production, wholesale and retail prices and the method pursued in the conduct of the business of any persons, firms or corporations engaged in the production, transportation, or sale of the said commodities, or of any business which relates to or affects

the same. It shall also study and investigate the circumstances affecting the charges for rent of property used for living quarters, and in such investigation may inquire into all matters relating to charges for rent.

In a fuel emergency the director of this division, under direction of the governor and council, may act as emergency fuel administrator, with increased power, including the right to seize fuel.

Special Studies. Under resolves passed by the legislature of 1930, the department was directed to make two special studies: One to study and investigate the general question of the relation of employer and employee in coöperative shoe shops, so called, and to consider the circumstances attending the purchase of stock by the employee as a condition precedent to his employment; the nature and extent of the representations made by the employer to the employee, and the remedies open to the employee when the stock has no market value; and the desirability of permitting this practice to continue. (Chapter 30, Resolves of 1930). Second, this department was authorized and directed to investigate as to the extent of unemployment, more especially among men and women over forty-five years of age, and, if such condition is found to exist, to ascertain and report to what extent it results from the working of laws relative to workmen's compensation or to group insurance, from removal of industries from the commonwealth on account of excessive taxes or otherwise, from consolidations and mergers of employers of labor, from the use of labor saving machines and devices, from the existence of surplus of labor owing to immigration, or from other causes. (Chapter 60, Resolves of 1930). The department made both investigations as directed. The report of the first is found in House Bill 301, and of the second in House Bill 1298.

Rules and Regulations. The department has revised and brought up-to-date the rules and regulations governing compressed air work. In this revision it had the assistance of a committee composed of representatives of both the employers and employees engaged in this work, also experts from other states, including the department of labor of the State of New York.

Petitions. A petition was received during the year from the Cape Cod Cranberry Growers Association—under section 56 of chapter 149 of the General Laws—requesting the department to determine the work of picking and screening cranberries to be a seasonal occupation. After an investigation and a public hearing the petition was granted and the work referred to declared to be a seasonal industry.

The commissioner received 185 applications requesting authority under chapter 236 of the acts of 1923, to permit laborers, workmen and mechanics to work more than eight hours in any one day on contracts entered into by the department of public works in the construction of highways. After investigation, 167 permits were granted.

Complaints. Following up complaints for non-compliance with the labor laws, and rules and regulations is one of the methods of enforcing the law and keeping in touch with conditions. This is in addition to our regular inspection work. Every complaint is investigated and orders issued to correct conditions, when needed.

The department received 799 complaints of alleged violations of the labor laws, which number does not include claims for non-payment of wages. Claims for non-payment of weekly wages numbered 2,222, and the amount paid to claimants as the result of action by the department was $59,876.99, an increase of $6,848.53 over last year. As stated in former reports, these claims are mostly for small amounts due employees who cannot afford to lose the wages due or to take civil action to collect the same.

Inspections. The regular inspections and investigations carried on by the department for the enforcement of the labor laws and the protection

of the safety and health of the workers are conducted through the division of industrial safety. There were 57,908 inspections in 36,432 establishments in which 772,059 men, women and minors were employed. There were 9,161 written orders issued for compliance with the laws and with the rules and regulations of the department, and in addition there were 6,574 verbal orders issued by inspectors at the time of their inspection.

Accidents. The total number of accidents including occupational diseases reported for the year ending June 30, 1930, was 170,663. Of this number, 61,742 were tabulatable injuries, that is injuries causing loss of time exceeding in duration the remainder of the day or shift in which the accident occurs. This included 344 fatal injuries, a decrease of nine fatal injuries since 1929.

The department has again coöperated with the three safety councils of the state and with the Associated Industries of Massachusetts in a state-wide year long inter-plant contest for the reduction of accidents. There were 263 corporations participating, with a total of 120,000 workers, and they worked a total of 281,025,536 man hours, with 3,525 accidents. This was a reduction of 700 accidents over the 1929 contest, although a larger number of plants were in the 1930 contest. The Massachusetts safety council notes an upward trend in accidents during the latter part of the year among a group of corporations not participating; from which it is reasonable to argue that the interest in safety work has been better maintained among plants that were stimulated, each month, by a detailed report of how their accident experience compared with the average of their own industrial group.

Unemployment. The extent of unemployment during the past year has been greater than that of any other year since the department was created, and the same condition exists throughout the country. The department, through its public employment offices and the division of statistics—as well as its other divisions—has endeavored to do everything possible to find jobs for the unemployed and to obtain statistical data concerning employment. The department, by direction of the governor, early in the year got in touch with the leading industries and endeavored to have them agree not to lower wages and this met with good results. Every city and town was requested to expedite appropriations for public work and to open free employment offices in their localities. The commissioner, by correspondence and by personal trips to Washington, endeavored to get work for the employees of the Charlestown navy yard.

It was discovered that we had many experienced woodsmen in Boston out of work while up in northern Maine they were importing Canadian woodsmen to work in the Maine woods. The commissioner, by direction of the governor, took the matter up by communication with and by personal visits to the department of labor at Washington and was instrumental in having the department at Washington suspend permits for Canadian woodsmen to come into the United States while we could furnish men from Massachusetts.

Committees and Conferences. The governor appointed a state wide committee, known as the Massachusetts Emergency Committee on Unemployment, of which the commissioner is a member. The commissioner also appointed a special unemployment committee for the department, (Chapter 60, Resolves of 1930) which made an investigation and report. The commissioner served on the unemployment committee appointed by His Honor, Mayor James M. Curley of Boston, and was made chairman of the state committee on unemployment of the American Legion. At the request of the governor, the commissioner represented the department at the conference of the American Academy of Political Science held at Philadelphia. The commissioner also attended the President's Conference on Child Health and Protection at Washington, D. C.

Public Employment Offices. The four public employment offices main-

tained by the commonwealth are administered by this department. These offices are located, respectively, at 23 Pearl Street, Boston, (general office); 25 Tremont Street, Boston, (mercantile office); Worthington Street and Columbia Avenue, Springfield; and 23 Foster Street, Worcester.

As a result of the industrial depression which prevailed during the entire year, and the opening of public employment offices in the various cities and towns, the records of each of these offices shows a marked decrease in 1930 as compared with corresponding records in 1929. The total number of positions reported filled in 1930 by the four offices combined, was 19,430, which was less by 10,727, or 35.6 per cent, than the number (30,157) reported filled in 1929. The number of persons called for by employers in 1930 was 23,228, which was less by 13,467, or 36.1 per cent, than the number (36,695) called for in 1929.

Of the 19,430 positions reported filled during the year 1930 by the four offices combined, 12,930, or 66.5 per cent, were filled by males, and 6,500, or 33.5 per cent, were filled by females.

Special attention is given at each of the four offices to the placement of veterans, and records relative to service rendered them are kept separately. The total number of positions reported filled by veterans in 1930 was 2,038, which number constituted 15 per cent of the total number of positions (12,930) filled by males during the year.

Endeavors have been made to establish closer relations with executives responsible for employing labor and to secure as patrons of the offices employers who heretofore have not made use of the services of the state offices. By advertising, by special circulars, personal visits of representatives of the offices, and by telephone, employers have been advised of the available supply of labor, and their attention called to the registration of applicants having special qualifications.

In the Springfield and Worcester districts, the areas served by these offices have been extended. In coöperation with the Greenfield chamber of commerce, 208 men were furnished employment through the Springfield office as laborers in the employ of the Fitchburg division of the Boston and Maine Railroad, and the superintendent of the Springfield office assisted in the opening of a public employment office operated by the Northampton chamber of commerce.

In September, two representatives of the Springfield office were assigned space at the Eastern States Exposition in West Springfield, and a representative of the Worcester office was assigned space at the New England Fair, held in the Industrial Arts Building at Worcester. Although these representatives were present during only a short period prior to and while the exposition and fair were open, 206 temporary positions were filled in Springfield and eight in Worcester, and the publicity thus gained for these offices should prove helpful.

During the past year arrangements have been made for closer coöperation with the state institutions in the filling of positions at such institutions.

Contractors employed in building construction work and on highways, and more particularly those employed on contracts for the state and political subdivisions thereof, have been requested to place their orders for workmen through the state public employment offices, and the response to such requests in some instances has been quite satisfactory notwithstanding the fact that there was such a large number of men who applied directly to the contractors.

Census of Manufactures. The census of manufactures in Massachusetts for the year 1929, was taken by the department during the past year, in coöperation with the United States bureau of the census. This census was under the immediate supervision of the director of statistics who was appointed supervisor by the federal bureau. According to the returns, the total number of manufacturing establishments in operation during the year 1929 was 9,952; the total value of products manufac-

tured in these establishments during the year amounted to $3,392,149,485; the value of stock and materials used in manufacture amounted to $1,685,585,153; and the difference between these amounts ($1,706,564,332) represents the *value added* by the various manufacturing processes. The average number of wage earners employed in the 9,952 establishments during the year was 559,443, and the total amount paid in wages was $695,351,100. A comparison of the totals for 1929 with the corresponding totals for 1928 shows that while there was a small decrease of 19 in the number of establishments in operation, there was an increase in each of the other principal items, as follows: value of products, 5.2 per cent; value of stock and materials used, 1.3 per cent; value added by manufacture, 9.3 per cent; total amount paid in wages, 3.8 per cent; and average number of wage earners employed, 3.4 per cent. Abstracts of the principal tabulations are presented in the report of the division of statistics, which forms a section of this report.

Census of Distribution. The federal census act provided that in addition to the censuses of population, manufactures and certain other branches, there should be taken in 1930, a "census of distribution." In November, 1929, the Massachusetts department of labor and industries and the United States bureau of the census entered into an agreement providing for coöperation in the taking of the censuses of manufactures and distribution within Massachusetts, and the director of statistics in this department was appointed supervisor of both branches of the work. In the preceding paragraph the census of manufactures has been referred to, and the results of that census are presented in some detail elsewhere in this report. The tabulation of the returns of the census of distribution is being made by the bureau of the census at Washington, and the results are to be published by that bureau. The census of distribution covered all retail and wholesale stores and other sales agencies and as this was the first national census of distribution taken in the United States, and there were no complete lists of distributors available for use in conducting a thorough canvass by mail, the collection of the reports was accomplished largely by enumerators. The total number of persons employed in connection with this census in Massachusetts was 137, of whom 15 were employed in the office and 122 were employed as enumerators in the field. The entire expense of this census, other than incidental office expenses, was borne by the federal bureau of the census. Approximately 59,500 reports for wholesale and retail stores and sales agencies, nearly 800 reports from building contractors, and reports for over 200 hotels were collected and forwarded to Washington.

Monthly Surveys. During the past year, the department, through the division of statistics, has extended the scope of its monthly surveys relative to employment and earnings of wage earners. These surveys now cover the principal manufacturing industries, building construction, wholesale and retail trade, and public utilities. Series of index numbers have been computed showing employment trends in these principal branches of employment, and charts, graphically illustrating such trends have been prepared for purposes of exposition, for use in connection with addresses, and for publication in the departmental reports. There are still several groups of industries which are not included within the scope of these monthly surveys, but during the coming year an endeavor will be made to extend their scope in order that all important lines of employment within the commonwealth may be fully covered.

Tercentenary Exposition. In connection with the celebration of the Massachusetts Tercentenary, the department took part in the exhibition of state activities held at the Eastern States Exposition at Springfield and at the Commonwealth armory, Boston. Each division was given space in which to display special features of its work and the employees in the department willingly volunteered their services at the booths to explain the work of the department to the thousands of people who visited the expositions in both cities.

The department receives many requests for information and for assistance of all kinds and on all subjects, and endeavors at all times, so far as it is able, through its divisions, to adjust these difficulties whether relating to the departmental work or otherwise.

Appropriation. The total amount of the several appropriations for the use of the department during the year ending November 30, 1930, was $462,048.00. The expenditures amounted to $421,093.26, leaving an unexpended balance of $40,954.74, in addition to which there was reserved for outstanding bills an amount estimated at $8,347.00. There has been collected in fees and paid into the treasury of the commonwealth through the division of standards the sum of $89,630.89.

E. Leroy Sweetser,
Commissioner of Labor and Industries.

FINANCIAL STATEMENT FOR 1930

General

Account	Appropriation	Expenditures	Unexpended Balance
Officials	$20,500 00	$20,500 00	—
Personal services	328,500 00	308,964 66	$19,535 34
Contingent and travel	93,800 00	82,040 62	11,759 38
Wage boards	1,700 00	—	1,700 00
Necessaries of Life	11,048 00	7,048 62	3,999 38
Legislative investigation re: cooperative shoe shops	1,500 00	1,497 12	2 88
Legislative investigation re: unemployment	5,000 00*	1,042 24*	3,957 76*
	$462,048 00	$421,093 26	$40,954 74
Collected in fees and paid into the treasury of the commonwealth			$89,630 89
Collected in fees and paid into treasuries of cities, towns and counties of the commonwealth			48,456 00

By Divisions

	Appropriation	Expenditures	Unexpended Balance
Administration			
Commissioner, assistant commissioner, associate commissioners (personal services)	$20,500 00	$20,500 00	—
Clerical and other assistance to administration	4,950 00	4,950 00	—
Division of Industrial Safety			
Personal services	133,000 00	130,644 39	2,355 61
Expenses	34,000 00	33,255 47	744 53
Board of Conciliation and Arbitration			
Personal services	15,000 00	11,840 00	3,160 00
Expenses	3,500 00	2,732 26	767 74
Division of Minimum Wage			
Personal services	14,550 00	13,234 30	1,315 70
Expenses	4,300 00	3,207 34[1]	1,092 66
Wage Boards			
Personal services and expenses	1,700 00	—	1,700 00
Division of Standards			
Personal services	32,500 00	31,946 24	553 76
Expenses	15,000 00	6,254 63[2]	8,745 37
Division of Statistics			
Personal services	45,000 00	42,866 44	2,133 56
Expenses	10,000 00	9,842 11[3]	157 89
Public Employment Offices			
Personal services	57,500 00	57,286 81	213 19
Expenses	15,000 00	14,756 98[4]	243 02
Massachusetts Industrial Commission			
Personal services	26,000 00	16,196 48	9,803 52
Expenses	12,000 00	11,991 83	8 17
Division on the Necessaries of Life			
Personal services and expenses	11,048 00	7,048 62[5]	3,999 38
	$455,548 00	$418,553 90	$36,994 10

Legislative Investigations

Investigation re: cooperative shoe shops	$1,500 00	$1,497 12	$2 88
Investigation re: unemployment	5,000 00*	1,042 24*	3,957 76*

[1] Not including outstanding bills estimated at $175 00
[2] " " " " " " 7,589 54
[3] " " " " " " 154 67
[4] " " " " " " 227 00
[5] " " " " " " 200 60

*Investigation re: unemployment in progress at close of fiscal year ending November 30, 1930. Appropriation continued to cover outstanding expenses estimated at $525.00.

REPORT OF THE DIVISION OF INDUSTRIAL SAFETY

JOHN P. MEADE, *Director*

INSPECTION WORK

The regular inspection of industrial establishments is the basis for the enforcement of labor laws. Through this process the safeguarding of dangerous machinery is assured and exposure of employees to the dangers of inhaling irritant dust and fumes controlled by the requirements of the statute. Sanitary provisions are maintained according to the standards fixed by rules and regulations. Proper illumination is provided in the work place. Supervising toilet and washing facilities and the ventilation of industrial establishments and the furnishing of pure drinking water to the employees and enforcing laws dealing with the employment of women and children are outstanding features in the inspection work. The investigation of building operations is included and the erection of stagings or scaffolds in a safe and proper manner required in the construction industry. Securing compliance with laws in relation to employment in the construction of public works has an important place in these duties. It includes the enforcement of citizens' preference in employment, the eight-hour day and the customary and prevailing rate of wages for mechanics and teamsters. All complaints alleging violation of labor laws are investigated. Accidents and diseases of occupation are studied to determine the cause of injury. Reference to these subjects in detail will be found elsewhere in this report. Special problems affecting employees in industry are brought to the attention of the commissioner regularly for his direction. During the year there was a total of 44,728 inspections and 13,180 re-inspections.

SUMMARY OF ACTIVITIES

	All establishments	Manufacturing	
		Mechanical	Mercantile
Number inspected	36,432	15,877	20,555
Number of Employees:			
Males			
14 to 16 years	5,103	3,463	1,640
16 to 21 years	43,841	35,018	8,823
Illiterate	818	806	12
Over 21 years	448,732	375,270	73,462
	498,494	414,557	83,937
Females			
14 to 16 years	4,966	4,658	308
16 to 21 years	59,766	48,456	11,310
Illiterate	911	910	1
Over 21 years	207,922	166,522	41,400
	273,565	220,546	53,019

The number of orders outstanding December 1, 1929 was 1,257, and the number of written orders issued in 1930 was 9,161, making a total of 10,418. The number of orders complied with in this period was 16,037, of which 6,574 were verbal orders and complied with at time of issuance. There were 25 cancelled orders, while those outstanding on November 30, 1930 totaled 930.

Summary of Inspections

The following statement indicates the activities of the inspection force for the year ending November 30, 1930:

Inspections: Mercantile, 20,555; mechanical, 15,877; building operations, 6,024; painting, 1,407; road construction, 865. Total: 44,728.

Reinspections: 13,180.

Visits

Complaints, 2,736; accidents, 1719; occupational diseases, 834; homework in tenement houses, 256. Total: 5,545. Home work licenses issued, 251. Painters' registrations issued, 290.

Orders Issued

Labor: Employment of women and minors, 301; posting time notices, 3,519; minors in prohibited trades, 42; procuring and returning certificates, 3,159; public exhibition of children, 7. Total: 7,028.

Health: One day's rest in seven, 190; ventilation, humidity, dust removal, drinking water and core-rooms, 357; lighting, injuries to eyes, toilet and washing facilities, 2,857; meal hours, seats for women, lockers, 104; common drinking cup and towel, 557; miscellaneous; tardiness, homework, after 6 P. M. in textiles, weekly payment, and weavers' specifications, 12. Total: 4,077.

Safety: Communication with engine room, 35; safeguarding machinery, 1,922; free egress, 80; unguarded openings, 48. Total: 2,085.

Building Operations: Painting orders, 723; building operations, 1,593. Total: 2,316.

Public Works: Prevailing rate of wages, 2; citizens' preference, 186; 8-hour day, 12; half holiday, 12; weekly payment of wages, 6; 48-hour law, 11. Total: 229.

Totals: Orders issued, 15,735; orders complied with, 16,037, which included 6,574 verbal orders complied with at the time of issuance, and 930 orders outstanding December 1, 1930.

Complaints

Employed under 14 years of age, 15; employed without certificate, 16; employed in prohibited trades and on dangerous machinery, 11; illegal public exhibition of children, 5; health and sanitation, 80; time notices not posted, 7; at time other than stated, 6; overtime employment of women and minors, 433; public works, 153; illegal advertising, 5; unguarded machinery, 9; labor, general, 27; building operations, 32; nonpayment of wages, 2,222. Total complaints: 3,021.

INDUSTRIAL SAFETY

Exposure of employees to work dangers in the operating of machinery requires constant attention of the inspection service for its prevention. The operation of intricate machinery and the introduction of new processes in manufacturing unite in producing occupational hazards in the work place. These concern the health and well-being of men, women and children employed in the industrial establishments of the state.

Safeguarding machinery at the point of operation and providing devices to guard against accident occurrence continues to require the attention of the division. Supervision of manufacturing and mechanical establishments is necessary to accomplish this result. In this connection, 1,988 orders, requiring compliance with law to safeguard the employees, were conformed to by the employers. These included measures to prevent accidents through contact with the dangers of power-driven machinery.

Definite provisions in this connection included requirements to control power transmission equipment and furnish emergency stopping devices, the covering of sprockets and inrunning gears to prevent contact with

employees, and the safeguarding of set screws on revolving parts. Projecting parts on clutches, tight and loose pulleys and motor stops were also included, and others related to belt and pulley equipment adjacent to passageways or working positions of operators; to vertical and horizontal transmission shafting, couplings and collars; balance and flywheels and projecting keys on shafting. Safeguarding machinery at the point of operation continued to furnish the division with difficult problems in protecting employees against operating dangers. Shielding the eyesight of employees and the care of hands and fingers exposed at the point of operation figured prominently in this work. Injuries of this type are of permanent partial character and arise largely from employment on intricate machinery. This condition provides a leading inspection problem in wood-working establishments and metal trade plants. The safeguarding of circular saws, jointers, planers, matchers and moulders was continued during the year, and power punch and drop forge machinery were given regular inspection. The use of devices for the purpose of keeping the hands of operators out of the danger zones was stressed in plants where this was necessary. The system followed in machinery safeguarding included the installation of interlocking devices on extractors in laundries; requiring improved safeguards on calender rolls and in connection with embossing and hide-splitting machinery; the use of two-hand trip devices on guillotine paper-cutters, and other means to control the hazards on machinery used in manufacturing and mercantile lines.

In recent years a gradual reduction in machinery accidents has taken place as a result of this intensive work. From the records of the department of industrial accidents these figures are taken and indicate this fact:

Machinery Accidents by Manner of Occurrence

	1919	1929
Starting, stopping or operating machine	9,675	3,318
Adjusting machine, tool or work	1,758	568
Flying objects striking operator	3,285	733
Cleaning or oiling machine	1,298	537
Breaking of machine, tool or work	620	239
Repairing machine	223	86
All other	1,631	2,336
	18,490	7,817

Reduction in time lost by employees through machinery accidents has taken place. For the year ending June 30, 1919, machinery accidents were responsible for 33.6% of all days lost because of injuries to employees in the industrial establishments of this state. The percentage of days lost in such accidents gradually dropped each year until it fell to 21.7% in the twelve months ending June 30, 1929. Efficiency in the safeguarding of machinery is indicated in the reduction which has taken place in permanent partial disability injuries in the past decade. In the year ending June 30, 1919, there were 1,750 cases of permanent partial disability, or 2.5% of all the tabulatable injuries. This number dropped to 1,352 cases in the twelve months ending June 30, 1929, or 2.2% of all the tabulatable accidents. These injuries were due to contact with machinery and included amputation or loss of fingers, thumbs, toes, feet, limbs, or the sight of eyes. Within this period eye injuries have been reduced. In 1919, loss of sight in one eye occurred in 115 cases, while in one other case sight in both eyes was lost. In 1929, 82 sustained the loss of sight in one eye, and one in both eyes. The use of hand tools is the leading cause of injuries of this type. These were responsible for more than one-half of the eye injuries in the past ten years. Flying chips of metal, mineral or wood; splashing liquids, including molten metal and acids,

and explosions of various types, continue to furnish fruitful sources for eye injuries. Accidents of this type occur from blows by belts; by emery grinding and polishing processes; flying particles from hand tools, machine and portable tools; from vegetable, animal and mineral dust; from sandblasting and flying objects of all kinds. Other causation of these injuries includes neglecting slight cuts which result in infection; exposure to excessive radiating heat; eye strain, resulting from improper or inadequate lighting, and lack of competent first aid, contribute materially to sources of eye injuries. The provisions of law to protect the eyesight of employees occupied prominent place in the work accomplished through inspection of industrial establishments. When the nature of the work or the machinery used permitted danger of injury to the eyes of employees, mechanical devices were required for their protection. Suitable goggles and transparent shields were among the means required for this purpose. Numerous difficulties intervened to hamper this accident-prevention work. The workmen failed to use protective devices, for they proved to be uncomfortable at times. The nature of the work frequently covers the lenses with dust, steam or perspiration. In emery wheel grinding, a glass guard securely fastened in a frame and properly attached to the mechanism is better protection in a case where several men use the wheel. Head shields or helmets were suggested for use in many cases where exposure of the eye to intense heat and light existed. These provisions were given coöperation in establishments where danger to the eyes prevailed in the course of employment. The industrial bulletin issued by the department and containing suggestions to employers and employees for the prevention of eye accidents was circulated among employees working in trades where eye injuries were numerous. The importance of taking care of the eyes and advice concerning proper first aid treatment in slight injuries was stressed in this publication. Through this medium attention was directed to the cause of eye strain, especially to employees working in clerical service and in drafting, sewing, tailoring, dressmaking, woodcarving, typesetting, spinning, weaving and other general textile work, and in shoe and leather making, tool and cutlery working and metal grinding and polishing. Inspectors made special inquiry concerning the practice of cleaning machinery in factories, workshops, mechanical or mercantile establishments, and in some cases written objection was made against the practice of cleaning machinery in motion. Many concerns now post warnings to the employees against this custom. Such action was urged in plants where it was found necessary. Cleaning or oiling machinery caused 1,298 injuries to employees in 1919, and accidents due to this cause dropped to 537 in 1929. In the application of the general safety rules and regulations to machinery, the progress made in preventing accidents is seen in these comparative tables:

Machine Accidents by Parts of Machine

	1919		1929	
Part of machine	No. of cases	Per cent of total	No. of cases	Per cent of total
Point of operation	14,764	79.8	4,760	60.9
Belts	711	3.8	247	3.1
Gears	702	3.8	236	3.0
Set screws, keys and belts	49	.3	11	.1
Counter weights	48	.3	2	.1
Cranks and eccentrics	23	.1	28	.4
Flywheels	20	.1	18	.2
All others	2,173	11.8	2,515	32.2
	18,490	100.0	7,817	100.00

The reduction of specific injuries is another result of regular supervision and frequent inspection of machinery. These accidents usually mean permanent loss of wage-earning capacity. Employees having this experience are frequently compelled to enter upon new employment in the industrial field. Most of these had served years of apprenticeship in their chosen trade, and through long experience became competent in operating intricate machinery. Tables are given herewith, indicating the number and type of these injuries in 1919 and 1929:

Specific Injuries	*1919* Number of Cases	Per Cent of Total
One finger or thumb lost at or above the first joint	1,109	73.1
Two fingers on one hand	171	11.2
One eye	115	7.6
One hand	60	3.9
One toe	25	1.6
One foot	15	1.0
Two toes	12	.8
Both feet	2	.1
One hand and one finger	2	.1
One hand and one foot	1	.1
Both eyes	1	.1
One finger on one hand, and one on the other	1	.1
One finger on one hand, and two on the other	1	.1
Two arms and two legs	1	.1
One hand and one toe	1	.1
	1,517	100.0

Type of Injuries	*1929* Number of Cases	Per Cent of Total
One finger or thumb	823	66.8
Two or more fingers, two or more phalanges	139	11.3
One eye	82	6.6
Right or major index finger, two phalanges	44	3.6
One toe	39	3.1
Right thumb, one phalange	27	2.2
Left or minor hand or arm	18	1.4
Right or major hand or arm	16	1.3
Right or major thumb, 2 phalanges	15	1.2
One foot or leg	9	.7
Right or major thumb and index finger, two phalanges	7	.6
Right or major thumb, 1 phalange, and right or major index finger, two phalanges	4	.3
Two or more toes	2	.2
One finger or thumb or both hands	2	.2
Both legs	2	.2
Two or more fingers or thumbs on both hands	1	.1
Both eyes	1	.1
Both hands or arms	1	.1
	1,232	100.0

Building Operations

The inspection of work places in the erection of buildings and their repair or alteration is paramount in the duties of the division. Staging used in the business of house or structural outside painting and scaffolding essential to the work of interior decoration involves occupational dangers requiring efficient supervision and have prominent part in this work. Eight inspectors, trained in the experience of the construction industry, examine daily the working platforms and other staging equipment provided for mechanics engaged in these building projects. General contractors engaged in the large construction enterprises give willing coöperation to the work of protecting their employees from accident exposure and promptly comply with orders issued by the department or suggestions made by the inspectors. Well trained mechanics in their employ are often found engaged in the inspection of supports or other contrivances for staging or scaffold, hoisting machinery for lifting materials or providing suitable covering to insure protection to employees from falling materials.

During the year 1,593 orders issued by the department to make the workplace safe in these dangerous trades were complied with. In cases where immediate action was necessary to safeguard workmen against employment injuries, the protection afforded in the regulations was quickly given. Practically all of the orders issued provided for the control of employment conditions known from experience to be accident producing causes. This is indicated in the records on file in the division. Briefly, these include: Compliance with provisions to furnish working platforms with toeboards and guard rails; proper horizontal sections and diagonal bracing for built-up scaffolding; protection to employees from falling material from over and above them by adequate flooring and other means; suitable staging to be maintained for the special purpose

of preventing injury to workmen employed on a pitched roof; rigid construction of open stairways, including landings and temporary treads securely fastened; handrails firmly attached and extending full length of the stairway, with adequate lighting facilities provided; safeguarding all openings in floors and providing barriers or railings for all spaces used for elevator hoisting purposes; requiring sufficient width of space on elevated runways for carrying material or using wheelbarrows; restricting the number of employees on two-fall staging or swinging scaffold and requiring equipment to make these safe; affording suitable enclosure of elevator machinery or hoisting apparatus to protect operator from falling material or inclement weather; furnishing full and complete insulation where workmen are liable to come in contact with wires used to transmit electricity of a dangerous voltage, and to convey smoke and gaseous matter to the outer air from heating apparatus for the drying of plaster or other materials.

During the year the work of inspecting roofing operations in the repair of buildings was continued. The use of improved devices for the protection of workmen in this hazardous employment was stressed. Coöperation in this connection was received from concerns engaged in this line of business. An outstanding difficulty in maintaining safe conditions in this employment comes from the individual who engages temporarily in the business and doing small jobs of this type, who assumes the risk of employing others without compensation insurance coverage. Under these circumstances there is little attempt to comply with regulations to provide safe work places for the employees. Building permits in cities and towns are followed closely by the inspectors in an effort to prevent illegal employment of workmen in these operations and to secure compliance with the law. During the year 727 orders were complied with to meet the provisions of the rules in connection with the painting business. Included in these were operations of outside painting on building structures and interior decoration of churches, theatres, schoolhouses, office buildings and other public buildings. Frequent inspection was given to stagings used in projects where it was possible and careful examination made of devices required in this trade to prevent accidents. Securing tie lines to a stable part of the building or structure, when the staging was supported by the gutters; providing lifelines and belts to men employed 50 feet or more above the ground, and requiring the use of standard ledgers, diagonal stays, horizontal stays, planks, trestles, brackets and ropes came within the scope of this supervision.

The building trades industry contributed 7,737 cases, or 12.9% of all industrial accidents in Massachusetts for the year ending June 30, 1929; 57 of these were fatal, or 16.1% of all fatal cases. There were no cases of permanent total disability. In 119 cases, permanent partial disability injuries occurred, or 8.8% of all cases of this type for the year. These latter cases included loss of fingers, hands, feet, toes or limbs or the sight of eyes. In the year 1929, the construction industry contributed the largest number of work injuries in any employment classification with but one exception.

Free Egress From Factory Buildings

In old factory buildings frequent inspection is necessary to maintain egress as required by statute. Many of these structures are lacking in adequate means of exit. In some of them small workshops are maintained and continual supervision is necessary to keep the passageway out from these places safe for the employee. In establishments where inflammable compounds or explosives were used and processes carried on that would obstruct or render hazardous the egress of operatives in case of fire, these conditions were given close attention. It was necessary to issue 80 orders in factories, workshops and manufacturing establishments where doors were locked, bolted or otherwise fastened in violation of law. These

applied to small shops, mainly in the wood-working trade, in shoe factories and in the clothing and rubber garment industry. In establishments used for the manufacture of fireworks and powder and those using volatile liquids capable of producing high concentration of dangerous fumes in the workroom, inspection was made each three months. Coöperation was secured in practical measures for the safety of the employees in these places.

In some of the tenant factory buildings the means of egress was provided, while other doors in workrooms were locked or otherwise obstructed, so as to prevent quick escape in case of fire or other catastrophe. Materials stored temporarily in front of these outlets made ordinary exit difficult. Stair landings and passageways were filled with obstructions, including barrels, boxes, refuse cans and containers. Warehouses in which small workshops are located were given close attention in this connection. Orders were issued by the department to correct dangerous conditions in these places, and these were promptly complied with. Efficient support was given to this work by municipal officials engaged in fire prevention work. In plants where gasoline, naphtha, petrol, benzine, ether, turpentine, benzol, methyl alcohol and carbon disulphide were found, conditions were given frequent supervision. These were concerned with processes in rubber compounding, dry cleaning, engraving, commercial photography and were in prominent use as solvents for paints, dyes, oils, cements and varnishes. Installation of fireproof rooms, closed safety containers, local exhaust equipment, and, in some cases, the substitution of less inflammable and non-explosive compounds, were precautions taken in some establishments to control these dangers.

Lighting in Industrial Establishments

In requiring compliance with the lighting code provisions, 378 orders were issued by the department, and these were complied with. These orders were concerned mainly with the improvement of the existing equipment. Failure to keep lamps free from accumulated dust and dirt was responsible in many cases for poor illumination. In places where eye fatigue was discovered among the employees, changes were made in location of the light source and proper adjustment of equipment to the work processes took place. In many lines of manufacturing adequate intensity of illumination is essential to the quality of the product and is necessary to produce the volume of output desired. Light measurements were made in the immediate operating area to determine accurate intensity in fine work requring close discrimination in detail. Lighting circuits for stairways and exits were carefully examined to determine that they extended inside the working room so as to light the immediate entrance to the stairway or exit. Where it was found that the system was not independent of the regular lighting of the working space, connection extending back to the main service entrance for the building was provided. Night inspections were made in some plants where glare from badly shaped lamps of high brilliancy and reflection from polished surfaces combined to expose employees to the physical consequences in connection with excessive glare.

The lighting facilities in exits, passageways, stairways, hallways, elevator cars, washrooms, toilet rooms and other parts of industrial establishments were made to comply with the rules and regulations through orders issued by the department during the year. These included the requirements relating to the height and location of lamps, the use of shades and reflectors and other means necessary to properly distribute the light in the workroom.

In the inspection of industrial establishments basement lighting had prominent place. Some manufacturing concerns use this part of the building largely for storage purposes, often without adequate lighting to prevent employees from stumbling over objects and sustaining injuries

through falling. This problem was given much attention in the large department stores. Stairway lighting was found to be inferior in some of the basements and difficulty in locating exits prevailed because of overcrowding the space used for storing merchandise. These conditions were corrected and compliance with requirements of the lighting code took place.

LABOR LAWS—WOMEN AND CHILDREN

Inspections were made in manufacturing and mercantile establishments and other places in which the statutes impose regulations on the employment of women and minors. These included among others, telegraph offices and telephone exchanges; express and transportation offices; manicuring and hairdressing establishments; motion picture theatres, and office buildings in which women elevator operators were employed. Compliance was secured with 7,493 orders issued by the department to employers in these places. These included the posting of time notices; procuring and returning certificates; employment of women and children at time other than as stated on the printed notice and protecting children from working at dangerous trades. Instructing employers in relation to the provisions for posting time notices was stressed by inspectors during the year and personal assistance given in filing accurately the lists of names of those employed on shifts. Requirements concerning the forty-eight hour law were explained, including proper posting of the notice, stating separately the hours of employment for each tour of duty and the amount of time allowed for meals and the procedure to be followed in making written report to the department of the day and hour of employment at time other than stated on the printed notice in the stopping of machinery for more than thirty minutes as provided in the statute. In each establishment, additional time notices were left with the employer, and he was advised to communicate with the department at any time when assistance was needed to post them properly. Restricting the hours of labor for women and minors in accordance with the statutes is not usually accomplished unless night inspection is regularly made in certain types of establishments. This applies especially to manufacturing concerns employing persons in shifts during the peak seasons in their line of business. In certain districts where these plants are located, the inspector follows the practice of giving day and night supervision to the plant. Such establishments include dressmaking and garment shops, bakeries and shoe factories, jewelry, candy, fur and other manufacturing lines of business. The employees working in each tour of duty were interviewed and their hours of employment verified through examination of and comparison with the lists of shifts on file. Much time was given by inspectors to this type of work in hotels, restaurants and lunch rooms. Active coöperation with employment managers in the large hotels was established in keeping women employed in the proper shifts. Night employment of girls under twenty-one years of age in lunchrooms, cafeterias and restaurants was given careful supervision. Working in groups to enforce requirements of the law restricting such employment between the hours of 5 A.M. and 10 P.M., inspectors visited these establishments in the late evening. The employment of cashiers in motion picture theatres and women in the operation of elevators in office buildings was included in this work.

Roadside stands at which women and children were employed were given attention. In this connection it was necessary to visit these places on holidays and during the evening hours. Changes in ownership and management and the frequent labor turnover in employment in these roadside stands make constant supervision necessary to assure compliance with the labor laws restricting the hours of labor for women. Coöperation on the part of the general public in the enforcement of laws restricting the hours of labor for women and minors is shown in 433 complaints

reaching the department from this source. In 139 cases a violation of law was found. In some of these, court action was taken against the employer. In others there was prompt compliance with the law upon the issuance of orders by the department. Many of these concerned employment of women in shifts in hotels and restaurants. Failure to comply with some detail of the shift system was responsible for nearly all the complaints from this source.

Employment at time other than stated on the printed notice proved to be the violation that was taking place in some of the manufacturing establishments complained of. Most of these cases happened where men and women were employed together and payment for work was on the piece rate basis. The practice of women reporting for work at time later than the hours for beginning as indicated in the time notice was found to be the reason for some of this employment after the closing hours designated therein.

Special visits were made to plants where this practice was found, and the provisions of law restricting the employment of women to the posted hours made clear to the management. Lack of knowledge concerning the provisions of the statute was shown to be the reason for filing such complaints. Employment after the usual hours to make up time lost through breaking down of machinery on a previous day of the same week figured in many of these.

Another source of misunderstanding arises in connection with the employment of women in stores after the close of the ordinary business hours. The employment in this case consists of a special shift to take inventories or to provide for the display of goods in connection with special sales, and others were concerned with women who were not employed in laboring, but in exclusively clerical work. All of these complaints were given careful investigation and the facts determined in each case. Out of this total of 433 complaints in relation to women and minors, 255 of them were anonymous. It is significant that in 294 complaints, alleging overtime employment of women and minors, investigation showed that no violation of law occurred.

Child Labor

During the year 4,041 orders were complied with in relation to the legal requirements for the employment of children. Regular supervision was given to the employment of children in factories, workshops, manufacturing, mechanical and mercantile establishments. Careful inspection was made of certificates on file. The occupation of the child was examined and the work done compared with the certificate record authorizing the specific nature of his employment. Time notices were examined and the hours of labor checked up through inquiry with the employees.

Special attention was given to the employment of young children and employers made familiar with the statutes which prohibit their employment in proximity to hazardous or unguarded belts; machinery or gearing while in motion; or in operating or assisting in operating woodworking machinery or stamping machines used in sheet metal or tinware; corner-staying machines in paper box factories; laundry machinery; power punches or shears and other types of dangerous work forbidden by law. As a rule, general coöperation was received from employers in this work.

Much time was given to checking up the employment of children in chain stores; private bowling alleys; theatres; dancehalls; miniature golf links, roadside stands and on trucks and other vehicles used in the delivery of food products and other commodities.

Maintaining compliance with the child labor statutes in casual or temporary employment is difficult to accomplish because of the frequent labor turnover among small business concerns whose work is seasonal in nature. For this reason special attention from the inspection staff was

necessary during the summer time at beach resorts and amusement parks. Conditions under which young children were employed in these places received close and systematic supervision, and this work protected them from harmful consequences of dangerous employment. This included the practice of working in the early hours of the morning at the seashore resorts in making deliveries from the store and market. Employment of children under these circumstances was involved with danger in riding on and jumping from automobile trucks. Requirements of the statutes in this connection were made known to proprietors of these establishments and reinspection made in each case to determine that compliance with law took place.

Child performers in public exhibitions continue to require the attention of the division. Many of these are well trained at considerable expense to their parents and often exhibit a clever talent in special lines. Such children may appear lawfully in lodge and society entertainments under private auspices. Here they may sing, dance or play musical instruments without interference on the part of law officers. These things they may not do in a circus, theatrical exhibition or in any public place, but they may do them in any festival, concert or musical exhibition upon the special written permission of the aldermen or selectmen. Failure to understand the statutory provisions in this connection is the cause of many complaints in cases which do not involve violations of law. Traveling circus troupes and theatrical companies from other states frequently come to Massachusetts and announce prominently the fact that clever child performers will take part in their exhibitions. Either as acrobats or contortionists or musicians these children are advertised to have a conspicuous place on the program. Under these circumstances managers are consulted and requirements of the law made known to them. Withdrawal of the children from the performance invariably follows and compliance with the statutes occur. In preventing the illegal appearance of children in theatrical exhibitions, the work of interviewing booking agencies was continued through the year. Coöperation was freely given by the proprietors of these establishments, and this did much to prevent the use of children in the illegal exploitation of their talents.

The number of orders complied with in relation to procuring and returning certificates was 3,539. Of this number, 578 were employment certificates for children between fourteen and sixteen years of age.

Lunch Period for Women and Children

To secure compliance with the statute requiring forty-five minutes' lunch period for women and children in factories and workshops where five or more such persons are employed, 13 orders were issued by the department. These concerned small workshops where the number of women employees increased and came within the scope of the law.

Seats for Women and Children

Providing seats for women and children employed in manufacturing, mechanical or mercantile establishments is required by statute, and whoever employs such persons shall furnish for their use and permit them to use suitable seats, except when the work done cannot properly be performed in a sitting position. In the enforcement of these requirements it was necessary to issue 74 orders during the year, and these were promptly complied with. Most of these were directed to department stores in which the working force was increased to meet the demands of the holiday trade or to handle the extra business caused by special sales. Upon notice from the department there was prompt adjustment in providing seats and good coöperation was secured in these places of employment.

Difficulties were experienced in the enforcement of these statutes when employers contended the work could not be done properly while the

operator was sitting down. In such cases conferences were held with the management and the law in this connection to protect health of the employees explained in detail. This practice resulted in removing the objections, and suitable seats were promptly made available. In establishments where the work was done exclusively in a sitting position, special attention was given to seating facilities provided for all of the employees. Some of the seats used under these circumstances were discovered to be unsuitable and dangerous and others did not provide for suitable posture. In small concerns this condition was often found and better equipment for seating facilities secured when these establishments were required by the department to provide improved accommodations.

Injuries to Employed Children

Continuing the practice of investigating injuries to employed children, analysis was made of the fatal and permanent partial disability injuries to those in the fourteen to eighteen year group for the year ending June 30, 1929. Conditions of employment were carefully examined in cases where it appeared that employment was in proximity to hazardous machinery or in violation of the certificating requirements or other provisions of law. Six children under the age of fourteen years were injured in their employment in street trades or at other work permitted under the statutes. There was a total of 2,620 injuries to children between fourteen and eighteen years of age, or 150 more than in the previous year. This was 4.4% of all tabulatable injuries. Classified by ages these are as follows:

Age	*Number*	*Boys*	*Girls*
14	101	86	15
15	284	219	65
16	902	695	207
17	1,333	1,027	306

Permanent partial disability injuries in the same group, classified by age and sex, are given herewith:

Age	*Number*	*Boys*	*Girls*
14	2	2	0
15	4	4	0
16	12	12	0
17	25	18	7

There were 2 fatal injuries to employees under sixteen years of age, and both were boys of fifteen. One of these was employed by a concern in the western part of the state and worked after school hours. He went into a stall where a horse was tied and was kicked and trampled to death. The other case concerned a boy who was employed in the delivery of bakery products. With the driver who was an older employee, he was thrown from the truck and sustained a fractured skull.

Five fatal injuries were sustained by boys under eighteen years of age. Two of these occurred in a plant engaged in the manufacture of shoe accessories. Both of these boys were seventeen years of age, and died as a result of severe burns received in an explosion.

Employed by his father in a garage, where his clothing became sprayed with gasoline, a boy seventeen years of age sustained burns when a lighted torch ignited a leaking gasoline pump. His death resulted seven hours later.

Operating a freight elevator, a boy sixteen years of age was caught in the shaft between the third and fourth floors in a large textile mill and crushed to death. He was found shortly afterward by a workman, who, peering into the elevator shaft, saw the body of the boy wedged between the floor and platform of the elevator.

In helping to unload fence posts from a truck, another minor seventeen years of age sustained a bruised arm. Infection followed and he died shortly afterwards.

In these fatal cases no violation of labor laws occurred.

Permanent Partial Injuries to Children Fourteen and Fifteen years of Age

There were six such injuries in this age group, and all were boys. These were as follows:

Industry		*Nature of Injury*	
Textile	3	Loss of 1 phalange, 1 finger	2
Shoe	2	Loss of 2 phalanges, 1 finger	1
Errand boy in students' rooming house	1	Loss of 1 finger	1
		Loss of use of 1 finger	1
		Loss of 1 eye	1
	6		6

In the most serious accident in this age group, a boy fifteen years of age, employed in a plant engaged in the manufacture of tire fabric, was struck in the eye by a metal part of the mechanism flying from a cleaning twister, resulting in its removal.

Two cases occurred in shoe factories: In one, a boy fourteen years of age, while riding on the elevator, got his fingers caught in the cable, crushing them badly and making necessary the amputation of the ring finger of the left hand. In the other, a boy fifteen years of age sustained the loss of use of the middle finger of his left hand when he struck it against an emery wheel used for sharpening the cutters on an edge-trimming machine.

Employed in a students' boarding house as an errand boy and helper, a minor fourteen years of age had his finger caught in a ventilating fan, resulting in the loss of use of the middle finger and the first joint on the index finger of the right hand.

While attempting to clean the gears of a loom in a textile mill, another boy lost the left ring finger at the first joint.

Permanent Partial Injuries to Children Sixteen to Eighteen Years of Age

There were 37 in this group—30 boys and 7 girls—classified by industries as follows:

Industry		*Nature of Injury*	
Shoe and leather	9	Loss of phalange, 1 finger	18
Textile	9	Loss of 2 phalanges, 1 finger	6
Foundry	6	Loss of 1 phalange, 2 fingers	1
Paper	4	Loss of 1 phalange, 3 fingers	1
Food products	3	Loss of 1 finger	1
Wood-working	3	Loss of 2 fingers	2
Electrical	1	Loss of 3 fingers	1
Printing	1	Loss of use of 1 finger	3
Rubber	1	Loss of arm	1
	—	Partial loss of use of both arms	1
	37	Loss of sight of 1 eye	1
		Knee permanently stiff	1
			37

Outstanding in the degree of severity in these cases were four:

In one, a boy seventeen years of age, who was helping a machine tender run on a belt in a dyeing and bleaching establishment, was caught in the shafting and whirled around, causing his left arm to be torn off between the elbow and shoulder.

The amputation of several fingers and a badly crushed hand were sustained by a boy sixteen years of age while operating a punch press. This machine was not safeguarded as required by law, and several days before the accident occurred orders were issued by the department of labor and industries requiring compliance with the statutes in this connection. Prosecution was undertaken and the concern was heavily fined on two counts.

In a candy establishment a boy operating a printing press, wearing a ring, caught it on a spring used to keep paper on the bed of the press. He could not withdraw his hand before the press closed and it was crushed between the bed and platen, incurring the loss of use of three fingers at the second joint of the right hand.

Employed in the manufacture of elastic webbing, a girl seventeen years of age, while removing threads from a quiller used a pair of scissors which became deflected in the course of her work, penetrating the left eye, resulting in permanent loss of sight.

Analysis of the history in each case shows the important factors in the causation of injuries to be these: Holding stock against machinery, when hand slipped; removing article from machinery in motion; tripping machine with hand in the danger zone; lacerating hands on end of loom, causing infection; picking cotton waste from inrunning gears; fingers caught between rolls while skiving innersoles; cutting yarn off quiller, scissors broke, striking employee in the eye; fish wrapper caught his finger on tin can, infection setting in and causing loss of use; in trying to keep paper on bed of press, hand crushed; removing chips from bed of planing machine; fingers jammed in elevator door.

In the forty-three establishments in which specific injuries occurred to children between fourteen and eighteen years of age, 38 occurred in plants where first aid rooms were maintained. First aid treatment was available for the injured employees as required by the rules and regulations for this purpose.

In other establishments medical chests were provided and supplies for first aid treatment made accessible to the employee. Records on file indicate that in the plants where the accidents happened regular inspection had taken place. In most of these machinery was safeguarded as required by law and sanitary facilities furnished. General compliance with labor laws was the rule in these establishments.

PREVENTION OF WORK INJURIES

Safeguarding exposure to occupational danger is the means essential for the prevention of work injuries. Regular supervision of hazardous trades is necessary to accomplish results in this direction. Through this system, unguarded machinery is discovered and the statutory provisions to protect the workman from accident producing causes in the operating mechanism are enforced. Conditions in the plant which contribute to injury causation are closely examined and the management required to make correction. This policy brings compliance with the regulations requiring that permanent passageways and gangways be of even surface and kept clear and free from projecting nails, tools and obstructions; keeping stair treads in good repair and equipped with hand rails of metal or wood free from splinters or other hazards, and providing the means to prevent slipping on the floor in plants where woodworking machines are used, including rubber mats or non-slip composition flooring.

As a means of reinforcing plant inspection in the removal of work dangers, the investigation of injuries is potential in this connection. The practice is an educational process. The inspector acquires expert knowledge in the work of prevention and becomes acquainted with the danger zones in industry. It is this system that improves the safeguarding of machinery at the point of operation. It promotes uniform methods to control the operating dangers on calender rolls, punch presses, circular

saws, jointers, planers and embossing machinery. Important contacts are made while investigating injuries. The opportunity is afforded to confer with the safety engineer or chief mechanic and secure valuable technical assistance in preventing plant accidents. Requirements of law were made known to the management and statutory provisions for the prevention of work injuries made clear. Plant meetings of the safety committee are frequently attended by the inspector. This presents an opportunity to establish coöperation by workman and employer with this division in the work of preventing accidents. Investigation was made in 1639 cases during the year. The practice of selecting typical accidents for investigation was continued. This included fatal and permanently disabling injuries, diseases of occupation, building trade accidents and injuries to minors in cases where information indicated the employment of children at processes forbidden by statute. This system of investigation afforded careful examination of factory conditions and the construction of machinery. Plant officials and employers were interviewed in relation to the causes of accident. In the case of children's injuries, employment certificates were examined and the work promised the child at the time of hiring him was compared with his occupation when injured. This was to determine if the employment was authorized by law. These reports are filed on forms prepared to secure complete record of existing facts concerning the employment of the injured person. This includes a statement of work done in the establishment to maintain safe conditions in employment. Condition of the machinery, floors, passageways and stairways is made part of the record, and description given of the industrial process in which employee was engaged. An account of the existing dangers and the means required to correct them is included.

The investigation of work injuries keeps the division well informed on hazardous places of employment and indicates what establishments may require frequent inspection. Experience gained in this direction becomes valuable in stressing the means essential for the prevention of accidents or reduction in the degree of their severity. Good training for the inspection force is provided in the safeguarding of machinery dangers and in the study of trade exposure. This practice makes the dangerous work places well-known, and reliable information is obtained regarding the use of a toxic substance in the course of employment. It is an educational experience in which skill and efficiency are acquired for the purpose of protecting health and saving life. Accident investigation has stimulated employer and workman to greater effort for the better control of operating dangers. Each year two-thirds of the permanent disability injuries in the work places of Massachusetts occur on power driven equipment. Most of these take place at the point of operation on woodworking and punch press machinery. Practical use is made of the facts secured in the investigation of the work injuries. During the year better devices or improved guards were required in many cases to control the dangers of operation. Others directed attention to dealing with conditions preventing non-machinery accidents. Plants in which high frequency rate of accidents appeared were given special investigation. This included conferences with safety engineers, head mechanics and plant officials who had active part in maintaining safe condition in employment. Special study was made by the supervising inspector in typical machinery accidents and assistance given to many concerns in the safeguarding of machinery at the point of operation.

Accidents were investigated in 1,076 industrial establishments and 174 buildings in the course of alteration or erection. Those occurring in industrial establishments included 834 adults and 242 minors under eighteen years of age. Analysis of these cases indicates the nature of injuries sustained as follows:

In foundries, as welders, press operators, lathe workers, forgers, metal cutters, grinders and millwrights, riveters and assemblers.

In paper trades, as calender operators, cutters, slitters, sheeters, and envelope cutters.

In the rubber trade, a heaterman was pouring sulphur chloride, benzol and tetrachloride into a trough. The mixture caught fire and he was severely burned. Others were employed as X-ray operators, who also received burns. Among the other employees who were injured were cutters, millmen, stitchers and strippers.

In tanneries, workers in the beamhouses and tanhouses were burned with lime. Stackers and shavers were injured by coming in contact with machinery.

In shoe factories, employees in the stitching room received punctures from needles. Groovers were cut on revolving knives. Heelers and lasters were punctured by nails and staples. Cutters, dinkers, moulders and perforators were injured by machinery.

Workers in laundries were injured while operating washing machines and manglers.

Woodworkers employed on planers, cutters, jointers, moulders, frame workers, sash makers and saw operators were injured while operating the same.

Employees in the metal trades were injured on wirecutters, punch presses, boring machines, stampers and lathes. A woman employee in a plant where surgical instruments are made was sealing glass tubes, when some of the alcohol caught fire, severely burning her face. In a razor blade factory a machine operator was washing out a tank which boiled over. In attempting to get away, he fell and was badly burned.

In printing and publishing plants, press operators and papercutters were injured.

In electrical shops, shear operators, diemakers, press operators and lathe operators were injured by coming in contact with machinery. Two installers were burned while working on a 13,000-volt bus drilling frame as they came in contact with the breakers. A woman employee dipped the ends of wire into chloride of zinc and denatured alcohol, which burned her hands. Linemen and meter testers were burned by coming in contact with live wires.

In textile mills, the injured persons were employed as pickers, spinners, winders, speeder tenders, weavers, drawing-in hand, carders, fullers, gill box hands, spoolers, garnetters, loomfixers and bobbin cleaners.

General Accidents

Abrasions, bruises and contusions	136
Amputations and loss of use of	337
Asphyxiations	3
Burns and scalds	55
Concussions	2
Cuts, punctures, lacerations	189
Crushed to death	14
Dislocations	7
Drowned	1
Electric shocks	18
Explosions	2
Fractures and breaks	97
Internal	6
Sprains and strains	53
	920

There were 103 fatal accidents investigated, of which 35 were due to fractures and breaks; 14 persons were crushed to death; 14 died as the result of electric shocks; 14 were due to burns and scalds; 6 to internal

injuries; 6 to sprains and strains; 5 to amputations; 3 persons were asphyxiated; 2 persons were killed in explosions; one was drowned; one man 70 years of age died as a result of compound dislocation; one death was due to lacerations and one to abrasions.

Four of the fatal accidents were to minors. Two of these were newsboys. One boy fourteen years of age, after selling his papers, came back to the office. He fell down the stairs leading to the cellar, fracturing his spine, which caused his death.

The other newsboy eleven years of age was delivering papers in a foundry. He stepped into the riveting shed, where he was told not to meddle with anything. He opened a valve and the rush of compressed air knocked him down, his arms and chest becoming rigid. He died a short time later.

A boy sixteen years of age worked as an apprentice in a wood-working establishment. He was sent upstairs on an errand and was found a little later at the bottom of the elevator well. There were no witnesses to the accident.

A boy fourteen years of age worked for a farmer. He fell backwards off a truck and fractured his skull.

Accidents occurred in the following establishments: Textile, 168; in shoe manufacturing, 80; tanneries, 39; in the metal trades, 90; in foundries, 78; in wood-working, 74; in paper, 60; gas and electric, 55; mercantile, 51; manufacturing food products, 31; garment making, 21; printing, 21; rubber, 19; chemical, 18; clay and stone products, 17; transportation, 15; laundry, 13; coal and wood, 13; garage, 7; radio, 6; comb making, 6; warehouse, 4; miscellaneous, 34.

Of these accidents, 620 were due to contact with machinery; 148 to other conditions about the factory; 32 to slippery floors, of which 10 were in textile mills.

Safeguards were provided in 611 cases, and in 211 plants there were safety committees and engineers. First aid rooms were maintained in 413 places, and in 308 there were medical chests provided. Additional care for employees by physicians or in hospitals was available in 147 of these.

NON-MACHINERY ACCIDENTS

Accidents arising from non-machinery causes were investigated when it appeared useful to do so. Nearly all of these are traceable to simple circumstances, and often occur through failure to exercise due care in the place of employment. Stepping on nails; tripping over boards on floor; falling downstairs; stumbling over obstruction in passageways; lifting heavy material are prominent incidents in work injuries of this type. Some of these produced extended periods of incapacity for work because of back injuries, and inguinal hernia requiring surgical operation and hospital treatment occurred in others.

Handling objects continues to furnish the leading cause of industrial injury in this state. This is shown in the following data taken from Table No. 10 of the annual report of the department of industrial accidents for the year ending June 30, 1929:

Distribution of Causes, by Per Cents

Causes of Injury	Totals	Deaths	Permanent Total Disabilities	Permanent Partial Disabilities	Temporary Total Disabilities
Handling of objects	32.1	7.4	–	15.1	32.6
Falls of persons	15.3	17.8	–	3.8	15.6
Machinery	13.0	14.7	–	61.8	11.8
Hand tools	8.4	1.1	–	7.9	8.4
Stepping on or striking against objects	8.2	2.0	–	1.6	8.4
Vehicles	6.5	25.8	25.0	3.2	6.5
Falling objects, not handled by employee	5.2	3.1	25.0	2.3	5.2
Miscellaneous causes	4.9	.9	–	1.9	5.0
Explosions, electricity	4.2	20.7	50.0	1.2	4.2
Occupational diseases	1.7	5.1	–	1.1	1.7
Animals	.6	1.4	–	.1	.6

The highest number of accidents occurred in the "handling of objects", with 32.1%, and these were responsible for 7.4% of the fatal accidents; 15.1% of the permanent partial disability cases. Falls of persons caused 15.3% of all tabulatable injuries, including 17.8% fatals; 3.8% of permanent partial disabilities.

Handling Objects: Accidents in this group included being caught between two objects; falling from trucks loaded with materials; helping to place article on vehicle for transportation; objects dropped upon another person by a fellow workman; straining in handling merchandise and violent contact with sharp and rough objects. In plants where injuries of this type were investigated, the need of exercising care in moving objects about the workroom was stressed, and employees were urged to avoid unsafe practices in handling tools, keeping them in good repair, and in the proper storing of material and merchandise.

Falls to Persons: Injuries due to this cause are mainly preventable. Slipping on the floor continues to inflict serious injury upon the employees in the industrial establishments of the commonwealth. Many of these are attended with extended periods of incapacity for employment. Nails projecting above the floor; oil-soaked spots beneath and around machines; passageways crowded with obstacles over which workmen stumble and fall; drippings from shafting hangers and leaking humidifiers are sources of painful injuries to employees. Inspection of industrial establishments included special attention to these conditions and maintaining permanent passageways and gangways free from danger and keeping them in repair and clear of obstruction. When floors appeared dangerous for the safety of the employees, orders were issued by the department, requiring prompt repair. Notices of caution were posted in some plants, warning the workmen of conditions in which slipping would cause falls. There was good coöperation in this connection with plant management and safety committees, and orders issued were promptly complied with.

How simple causes may lead to serious injury of factory workers is indicated in the following:

In a hat-making establishment, an employee slipped on a wet grating, spraining his back.

A woman, employed as a stamper of brushes, slipped on a piece of oily tin and fractured her wrist.

In a textile mill, a woman, employed as a weaver, slipped on the floor and sustained an injury to the base of her spine.

A machine tender in a paper mill was putting lead on the roll, when he lost his balance and fell against the machine. His arm got twisted around the roll and was fractured in three places.

A woman in the weave room slipped on the floor, which was being washed, spraining her back and bruising her head.

A moulder in a wood finishing plant was oiling the machine while in motion. He slipped on the oily floor and his hand was caught between the gearing, amputating the third finger of his left hand.

Eye Injuries, 1930

Investigation was made in 156 eye injuries. These included 148 men and 8 women. Classified by industry, they are as follows:

Industry	*Number*	*Industry*	*Number*
Foundries	45	Rubber	3
Metal trades	22	Mercantile	3
Textile	15	Construction	4
Wood-working	10	Chemical	2
Garage	10	Printing	2
Shoe and leather estab.	12	Food products	2
Paper	7	All others	11
Granite	4		
Electric and electrical	4		156

By nature of industry they are classified as follows:

Foreign bodies	69	Loss of sight	2
Cuts, punctures, lacerations	29	Bruises	3
Irritations	24		
Burns	23		156
Loss of eye	6		

Causation of these injuries is classified as follows:

Irritation from acid fumes, chips flying from metal and emery wheels, irritation from glare of torches, punctures by wires and needles and burns from acids and caustic solutions.

Typical illustrations of accidents in eye injuries are these:

Man working in a book cloth making establishment was hit in the eye by a piece of fibre board, necessitating the removal of the eye.

An employee of a public works department was unloading a truck, when the crank flew back, hitting him in the eye, causing its removal.

A mechanic in a garage was helping to replace a bracket in a head light, when he was struck by a screw driver which slipped from the other man's hand. It was necessary to remove the eye.

A mechanic in a foundry was splitting a piece of 7/8″ stock, and a knot flew out, hitting him in the eye, which had to be removed.

In the woodworking trade it was necessary to remove an eye of two employees. One man was hit in the eye by a piece of stone broken off by another man. The other man was hit by a piece of wood which was thrown by a broken belt.

A man in a foundry lost the vision of one eye when he was hit by a pin which he was putting in place.

A carder in a textile mill was putting a pin in shipper rod, and as he hit the pin with the hammer, it struck him in the eye. He lost the vision.

Accidents in the Building Trades, 1930

There were 174 accidents investigated in the building trades, of which 30 were fatal. Classified by nature of injury, these are as follows:

Abrasions, bruises & contusions	36	Fractures	82
Amputations	7	Internal	1
Concussion	1	Sprains and strains	18
Crushed to death	9		
Cuts, punctures, lacerations	20		174

Classification of these injuries by employment is as follows:

Building construction	104	Alteration, repairing	11
Painting	39	All others	5
Roofing	15		
			174

Causation of these accidents is as follows:

Lost balance	64	Faulty scaffolds	6
Staging collapsed	41	Struck by hoisting derrick	6
Struck by falling object	18	Broken gutters	5
Broken ladders	15	All others	12
Falls through openings	7		
			174

INDUSTRIAL HEALTH

Preventing the exposure of employees to conditions harmful to health received prominent attention in the inspection of industrial establishments. Irritant dusts and dangerous fumes arising in processes involv-

ing the use of industrial poisons were given careful examination. In plants where such conditions prevailed, the coöperation of the management was secured to safeguard against these dangers. Indicating the progress made during the year in this connection, 187 orders were complied with, which were issued by the department, and these concerned principally the removal of dust, fumes and gases from the workroom.

The practice of making investigation of ventilation conditions in certain trades during the winter season was continued. This enabled the holding of tests at the most appropriate time to determine accurately the presence of lead in the area surrounding lead pots, casting machines, soldering benches and in other processes of industry.

Improvement of sanitary conditions was made in manufacturing and mechanical establishments employing large numbers of both sexes. Employers were required to conform with the provisions contained in the rules and regulations for washing and toilet facilities in industrial establishments. In some of these cases adequate facilities, based on the maximum number of persons of either sex employed at one time were not provided, while in others these were not readily accessible to persons for whose use they were designed and located more than 300 feet distant from the regular place of employment.

Other conditions found by the inspector and corrected by the employer were these: Entrance to the water-closet compartment opening directly into the room and not provided with a screen; ventilation was not provided directly to the outside air by a window, skylight or other suitable opening; toilet room and compartments were not furnished with adequate lighting; enclosing walls were not substantially constructed to maintain privacy; floors were not constructed of material impervious to moisture, and side walls to a height of nine inches did not comply with this requirement; compartments for women inside a toilet room were not provided with proper doors or furnished with suitable fasteners. Maintaining provisions for washing facilities was also included in this work. There was a total of 1,623 orders issued, requiring compliance with the regulations in this connection. This work also included providing the proper number of sinks and other appliances, based upon the maximum number of persons entitled to use the same at any one time, and requiring adequate lighting facilities and keeping floors around sinks clean. In special industries or departments where undue exposure to poisonous substances or liquids existed, clean, running hot and cold water was required. Better lighting facilities were furnished in 378 industrial establishments to comply with orders issued for this purpose. Changes made in location of light sources accomplished much in the prevention of eye fatigue among employees in many cases.

Industrial poisons were found in the work processes of 2,500 places of employment during the year. These establishments were given regular supervision and careful study made of the trade exposures. Mechanical devices were required at the point of origin in the generation of dusts, fumes and gases, to prevent inhalation of impurities by employees. The use of masks, rubber gloves, suitable containers and respirators, and the providing of goggles for the protection of eyes, was required in many of these cases to safeguard against the dangers to health.

Exhaust systems used in connection with surface-grinding machinery in granite-cutting establishments were given frequent inspection during the year. Equipment of this type is necessarily subjected to rough usage and frequently needs repair. Intense clouds of dust are set up in the course of the work, and the device for the removal of dust, operated with exhaust equipment, is placed in proximity to the cutting hammer. Surface-cutting machinery in the granite sheds of this state is now generally provided with this equipment. There remains the problem of dust-removal equipment in work where finely-pointed, pneumatically-driven chisels produce ornamental designs and place inscriptions on monuments.

Much attention was given to this process, and conferences were held during the year with an association of employees in relation to the installation of suitable equipment to deal with this danger. Inspectors of the division visited granite sheds in other states to determine the conditions of work in these places and made careful examination of devices and processes used in the removal of mineral and metallic dust. Coöperation was maintained with groups engaged in the study of these problems. Recent invention of exhaust machinery to control this hazard has taken place, and new apparatus is now in use in some of the monument-making workshops in the granite centers of the state. This experiment is noted carefully by the inspection force, and it is likely that another danger to the health of workmen will soon be brought within control.

The manufacturing of storage batteries, with its lead-burning operations, generating fumes, and the weighing of red lead and litharge and mixing them with diluted sulphuric acid, continues to require attention from the division. Nearly all of the workshops used for this purpose are small, employing usually a few men in each place. Keeping the room free of dust by using the vacuum process for this purpose; prohibiting the weighing of lead oxides without use of respirators; providing exhaust blower on the paste-mixer churns, lead crucibles, plate-casting moulds and pasting tables were among the means required to protect the health of the employees.

Operations in foundries and exposure of employees to the inhalation of dust arising from the use of silica sand were carefully investigated. Work processes involving danger from intense heat and breathing into the lungs carbon monoxide gas; injuries from explosion and flying sparks; serious burns caused during the transportation of the metal to the moulds, and the process of pouring and the well-established dangers incidental to sandblasting operations, were each given inspectional supervision. In these establishments the importance of using respirators and goggles was stressed among the employees and prompt application of first aid treatment in case of lacerations and burns advised.

Ventilation

In connection with industrial processes which generate toxic fumes and gases escaping into the workroom, 254 orders were issued and of these 186 were promptly complied with. To control the trade exposure at the point of origin, local exhaust equipment was provided for this purpose in most of these cases. Special apparatus was installed in others to remove fumes to the outside air. This was necessary in garages, where the danger of discharging carbon monoxide gas in the workroom was imminent.

Careful examination was made of dust and fume removal systems. Processes involving the use of poisonous substances in work places were given attention. Duct openings and types of hoods were examined closely and tests made to determine the efficiency of ventilating systems. Metal polishing establishments, laundries, hotel kitchens and other places where steam and vapor made conditions uncomfortable in the workroom were included in this work. In newspaper and printing establishments, stereotype kettles and matrix driers were inspected regularly. Defective exhaust pipes were found used in some of these places, and correction in these cases occurred promptly. Shoe factories, metal plating concerns, wood-working establishments, foundries and firms engaged in the manufacture of rubber products and asbestos fabric, each had dust problems requiring corrections in the equipment used to prevent inhalation dangers. Mechanical means employed for this purpose were examined in the course of inspection in plants operating emery, grinding, polishing and buffing wheels. Sanders in wood-working shops, in which lead and arsenic were used in the process of work, required attention. Good coöperation was secured in complying with the law.

First Aid Treatment

Paramount in importance is the work of efficient first aid treatment in the care of slight occupational injuries. Neglect in these cases very quickly leads to bad infection. Experience in the prevention of work accidents indicates that prompt treatment of cuts, burns, lacerations, punctures and bruises is essential to prevent extended incapacity for work in injuries of the permanent partial disability type in cases of this kind.

In the accident experience of the industrial establishments of the state, the problem of infection occupies prominent place. In 1928, there were 5,214 injuries of this type, or 8.7% of all the tabulatable injuries. In 1929, there was a total of 5,845, or 9.7 % of the tabulatable injuries occurring in that year. A comparison of these figures indicates that there was an increase of 630 cases over the preceding year. In 1929, one out of every ten tabulatable injuries became infected as compared with one out of every eleven in 1928 and one out of every twelve in 1927.

The department of industrial accidents in its Table No. 9 for the two years presented herewith, indicates the experience with infections ensuing from industrial injuries:

1928	Totals	Deaths	Permanent total disabilities	Permanent partial disabilities
Abraisons, bruises, contusions	781	2	–	1
Burns and scalds	119	–	–	1
Cuts, punctures, lacerations	3,401	11	–	4
Fractures	5	1	–	2
Sprains and strains	4	–	–	–
All other	874	4	1	3
Amputations, loss of use	27	–	–	27
Occupational	3	–	–	–
Totals	5,214	18	1	38
1929				
Abraisons, bruises, contusions	945	10	–	1
Burns and scalds	138	2	–	–
Cuts, punctures, lacerations	3,478	11	–	6
Fractures	7	2	–	1
Sprains and strains	8	–	–	–
All other	1,224	3	–	1
Amputations, loss of use	35	–	–	35
Occupational	10	–	–	–
Totals	5,845	28	–	44

Requiring compliance with law in relation to first aid treatment for persons injured or taken ill upon the premises of industrial establishments, there were 856 orders issued by the department during the year. These were conformed to promptly, and good coöperation was received from many sources in educating employees to report at once to first aid rooms for early treatment.

Procuring of medical or surgical chests, with the necessary medicines, instruments and appliances required by the department, and first aid or emergency rooms in manufacturing and mechanical establishments, where one hundred or more persons are employed, was included in this work. Better location of first aid rooms in the plant, so as to provide adequate heat and ventilation, was required in some of the orders complied with. Many concerns assisted the department to maintain better standards in the first aid treatment of injuries and provide employees with

suitable training under competent direction to do efficient work of this nature. For this purpose instruction was given by physicians to employees of many concerns in the proper type of service to be rendered in case of persons injured or taken ill on the premises, and lecture courses in hospitals and under the auspices of health organizations were made available to those who would acquire this skill and experience.

The keeping of accurate records in first aid rooms was stressed in the inspection of industrial establishments. Attention was directed to the regulations requiring these records to be open for examination by the inspector. This provision accomplishes much in pointing to the location in plants where injuries are more numerous.

Stimulating interest in the prevention of infection injuries is included in the daily work of the inspection force. Plant managers were advised to encourage the practice on the part of employers in having slight injuries promptly treated. To safety committees, the need of early attention and proper care in case of slight injuries, including burns, cuts and punctures, was emphasized. Persons in charge of first aid rooms were made acquainted with the facts concerning the increase in injuries of this type.

OCCUPATIONAL DISEASES

There were 389 cases of industrial disease investigated during the year. These included 348 men and 41 women. One of these was fatal. In each of these cases a statement was secured from the attending physician, indicating in his opinion that the patient was suffering from an ailment or disease contracted as a result of the nature, circumstances or condition in his employment, as required under section 149 of the General Laws. The investigation of these included the examination of the work place and exposures of the employee, and the reports made were carefully supervised by physicians on the inspection staff.

Cases of Industrial Illness Investigated During Year Ending November 30, 1930, by Disease, Age and Sex

Illness	Total Cases	16–18 M.	16–18 F.	18–20 M.	18–20 F.	21–30 M.	21–30 F.	31–40 M.	31–40 F.	41–50 M.	41–50 F.	51–60 M.	51–60 F.	61+ M.	61+ F.	Total M.	Total F.	Fatal M.	Fatal F.
Dermatitis	223	12	7	11	3	57	9	55	9	30	3	17	–	10	–	192	31	–	–
Gas and Fume Poisoning	77	–	1	6	2	26	2	20	2	6	–	10	–	2	–	70	7	–	–
Lead Poisoning	46	1	1	–	–	18	–	9	–	11	–	6	–	–	–	45	1	–	–
Anthrax	9	–	–	1	–	1	–	3	–	1	–	2	–	1	–	9	–	1	–
Pneumoconiosis	8	–	–	–	–	–	–	2	–	2	–	4	–	–	–	8	–	1	–
Other Dust Poisoning	8	–	–	1	–	–	–	–	2	3	–	2	–	–	–	6	2	–	–
Tuberculosis	6	–	–	–	–	2	–	–	–	2	–	2	–	–	–	6	–	1	–
Chrome Poisoning	5	–	–	1	–	2	–	1	–	–	–	1	–	–	–	5	–	–	–
All Others	7	–	–	–	–	1	–	1	–	3	–	1	–	1	–	7	–	1	–
Totals	389	13	9	20	5	107	11	91	13	58	3	45	–	14	–	348	41	4	–

Employees worked at the following operations:

Tanneries: Helper in dye-mixing room; hair and felt work; seasoner; sorting wet skins; swabbers; fleshing machine operator; making tan; beamhouse worker.

Textile Mills: Back tending; kettleman in dyehouse; tub washing; slubbing; printing; color mixing; dyeing and wet finishing; wool scouring; cotton sampling.

Foundries: Making bronze castings; cleaning and dipping castings; pouring molten metal; operating furnaces; chilled moulding; wet tumbling; sandblasting; operating tumbler mills.

Shoe Manufacturing: Repairing; staining vamps; treeing shoes; cementing heels; scouring heels.

Rubber: Millman; calender operator; mixer; gaiter maker; bootmaker; sorter; laborer.

Metal Products: Nickel plating; metal polishing: leadcoaters; moulders; furnacemen; ladlemen; mill wright; machinists; painter; spraying.

Miscellaneous: Nickel plating; handling paint; mixing putty and lead; burning lugs; enamel spraying; hydraulic press operator; handling chemicals.

The causation of these diseases was traced to the following:

Tanneries: Handling skins soaked in chrome solution; making tan from soda; sulphuric acid and prepared chrome; cuts infected from lime or caustic soda; daubing aniline black; aniline blue and sulphate of iron; leather-finishing processes; handling hot rubber; spraying leather with air guns; mixing thinner of toluol, butyl and amyl acetate; operating spray gun; handling dry and salted hides.

Foundries: Inhaling hydrochloric acid fumes; inhaling silica dust and metal fumes; gas fumes escaping from vent holes. Lead fumes from molten mixtures make the principal causation.

Rubber Mills: Handling compounds; cementing rubberized cloth fabrics.

Shoe Factories: Handling cleansing agents for shoes; inhaling leather dust and naphtha cement fumes; using formula to repair vici kid shoes.

Tetile Mills: Handling dye saturated materials; weighing dyestuffs; handling wool sprayed with solution of mineral oil; washing colors from tubs; placing yarn in chrome; handling wool soaked in sulphuric acid; using potash and water to remove the color from hands; treating brake linings with asphaltum; handling acids and dyes.

Manufacturing Establishments: In dipping hands in caustic solution; repairing truck in garage; handling junk; inhaling dust from sandpapering metal; fumes from salamanders; chromium fumes from plating tank; chromium acid used in solution to clean plates and in various dyes; working in tank with acetylene torch.

Metal Trades: Dipping metal frames into solution; grinding copper oxide; cleaning nickel parts.

To prevent the recurrence of similar diseases of occupation, improvement was made in the exhaust systems in many cases. In some of these better ventilation was provided in the workroom and more suitable washing facilities made available. Other means included adequate hot and cold water, with shower baths, lockers, medical chests, first aid rooms, respirators, goggles, masks, wooden shoes, rubber aprons, rubber gloves and oilskin sleeves, canvas shoes and aprons and suitable places for eating food.

No disease of occupation from the inhalation of irritant or poisonous dust, fumes or gases occurred to children under sixteen years of age in this group.

Dermatitis

There was a total of 223 cases investigated. The nature of injury by industry, age and sex is given herewith in statistical form:

Dermatitis Cases Investigated during Year Ending November 30, 1930, by Industry, Age and Sex

Industry	Total Cases	16–18 M.	16–18 F.	18–20 M.	18–20 F.	21–30 M.	21–30 F.	31–40 M.	31–40 F.	41–50 M.	41–50 F.	51–60 M.	51–60 F.	61+ M.	61+ F.	Total M.	Total F.
Textile	55	1	1	–	–	15	–	15	1	9	–	8	–	5	–	53	2
Metal Trades	33	–	2	4	2	6	4	7	2	4	–	1	–	1	–	23	10
Shoe Manufacturing	31	2	1	–	1	5	2	7	2	7	3	1	–	–	–	22	9
Rubber	21	2	1	3	–	7	–	6	–	2	–	–	–	–	–	20	1
Tannery	21	3	–	1	–	4	2	5	–	3	–	3	–	–	–	19	2
Chemical	13	–	–	–	–	5	–	4	2	1	–	–	–	1	–	11	2
Foundry	8	2	–	–	–	2	–	–	–	2	–	1	–	1	–	8	–
Printing and Publishing	7	–	–	2	–	2	–	1	–	1	–	1	–	–	–	7	–
Garage	5	1	–	–	–	3	–	–	–	–	–	–	–	1	–	5	–
Mercantile	5	–	–	–	–	–	–	4	–	–	–	1	–	–	–	5	–
Electrical	5	–	1	–	–	2	–	2	–	–	–	–	–	–	–	4	1
Paper	5	1	–	1	–	2	1	–	–	–	–	–	–	–	–	4	1
Contractors and Builders	2	–	–	–	–	1	–	–	–	–	–	–	–	1	–	2	–
Woodworking	2	–	–	–	–	–	–	1	1	–	–	–	–	–	–	1	1
All others	10	–	1	–	–	3	–	3	1	1	–	1	–	–	–	8	2
Totals	223	12	7	11	3	57	9	55	9	30	3	17	–	10	–	192	31

In the metal trade employees receiving this infection included assemblers, platers, machine operators, wire drawers, tinsmiths and bench workers.

Other cases occurred as follows: In foundries, to chip separators, picklers, helpers and repairers; in paper trades to pressmen; in printing and lithographing, to pressmen, transfer men, blue print operators and helpers; in the automobile trades to greasers and painters; in chemical trades to soap makers, furnacemen, to employees in the phosphate department of fertilizer plant; in experimental work in the manufacture of heavy chemicals and to pressers in dyeing and cleansing shops.

Miscellaneous industries in which dermatitis cases were found included photoengraving, building contractors; restaurants; electrotyping; gum manufacturing; celluloid manufacturing; radio tube and fireworks manufacturing; phonograph records and match manufacturing; electroplating; musical instrument manufacturing; lamp shade manufacturing; bakery; fur hat manufacturing; toy manufacturing and pyroxylin manufacturing.

As to conditions in the onset of this disease, the following appeared to be common factors: In the textile trade most of them were caused by the use of dyestuffs; in the metal trades, by caustic soda, naphtha, oils and greases, resin and muriatic acid; in tanneries, by lime, sulphuric acid, sodium sulphide; in the shoe trade, by cement, ether, naphtha, ammonia and benzol; in the paper trades, by glue, caustic potash, kerosene and gasoline; in chemical industries, by soap powders, oil, acid phosphate, sulphide of soda and hot molten lead; in manufacturing electrical equipment, by oil, mica and gasoline; in photoengraving by collodion, accetic acid, nitric acid, turpentine, burgundy pitch, zinc, silver nitrate, cyanide of sodium, ammonia, hydrochloric and chromic acid; in the manufacture of rubber, oil, varnish, hexa, naphtha cement, sulphur chloride and rubber compounds; in foundries, oils and greases. Other materials include aniline dyes and pigments in celluloid manufacturing; carbon tetrachloride in the making of radio tubes; dye in the making of fur hats; benzine for washing hands in toy manufacturing; powder used for washing dishes in restaurants; acid fruit juices and caustic chemicals used in baking pans. In these cases the employees were advised by the physicians of the department to wash their hands and forearms frequently with mild soap and water in employment where irritant substances are used. Workmen were cautioned not to allow irritants to dry on the skin.

Lead Poisoning

There was a total of 46 cases of lead poisoning investigated during the year. These included 45 men and 1 woman. Eight of these occurred in storage battery manufacturing plants. These were all incipient cases, with a short period of incapacity for work. They occurred among men employed in the plate department, who came in contact with toxic substances and who worked at burning lead plate connectors, as assemblers and batterymen; in the operation of pasting machines, in which their hands and clothing became smeared with lead oxide; in mixing red lead and litharge and adding sulphuric acid under the hood; in fusing the projected lead plate ends of battery plates; in flushing floors and repairing equipment in workshops.

In housepainting and the spraying of automobiles, 15 cases were investigated. Three of these were interior decorating projects. In this work the employees mixed and used lead paint, and in the course of their employment were exposed to the inhalation of dust in sandpapering surfaces. Another employee in the repairing of automobiles worked at spraying lacquer, and in the plant where he worked respirators were provided and an exhaust system installed. The other cases included men employed in spraying lead paint on steel beams. Helmets and respirators were provided for the workmen, but they were not used.

A workman, with sixteen other welders, was engaged where an oxy-acetylene torch was used. The chief duties of the other employees consisted of cutting lead painted structural iron parts of bridges with this torch. Although a rubber mask was furnished, also a breathing disc which was changed daily, this man sustained lead poisoning and was incapacitated for a period of ten months. Other cases were mild in character and the period of lost time very small.

In other cases employees worked at weighing reclaimed material for rubber compounds, including red lead, sulphur and tar compounds.

In two establishments, 6 of these occurred among employees engaged in the manufacture of rubber and rubberized products. In some of these cases there was exposure to the inhalation of litharge and lead dust. Others were employed at the lead furnaces; in skimming dross off the lead pot; in pressing out lead which surrounds rubber hose; in inhaling fumes at furnace where lead is melted; and in pulling the lead coated hose through stripping machine which cuts and removes the lead covering from the fabric. In both plants there is close coöperation with the department in protecting the health of workmen. Physical examination of employees frequently takes place. In these establishments there are approximately 6,500 persons employed and physicians make daily visits to each plant.

In a smelting works, in which ample ventilation was provided and all melting pots hooded properly and connected to a flue with good draft, 2 employees who handled large quantities of old metals contracted lead poisoning. Investigation of these cases showed that the firm was trying to do everything possible to prevent injuries to the employees. In this plant, physical examination of employees occurs regularly. Milk is furnished by the concern, and, realizing the dangers from the nature of the work in melting up old junk, including brass and copper, in large quantities and handling it under many conditions, other means are employed to prevent lead poisoning.

In a foundry, 3 employees were engaged in pouring a composition containing lead from a bull ladle into sand and iron molds. An enclosed cupola is installed in the plant where this work is done to prevent the fumes from escaping into the workroom. Good general ventilating conditions exist and are provided by open windows, doors and monitor roofs. The other cases included employees who worked in making lead and in mixing lead paint.

Instructing the employees in all of the establishments where these workmen contracted the disease in the necessity of using the washing facilities in the plant as a means of preventing incidence of lead poisoning was done, and the practice of proper hygiene stressed.

Lead Poisoning Cases Investigated during Year Ending November 30, 1930, by Industry, Age and Sex

Industry	Total Cases	16–18		18–20		21–30		31–40		41–50		51–60		61+		Fatal	
		M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.*	F
Painting	15	–	1	–	–	2	–	2	–	5	–	5	–	–	–	–	–
Battery Manufacturing	8	1	–	–	–	6	–	1	–	–	–	–	–	–	–	–	–
Rubber	7	–	–	–	–	3	–	1	–	3	–	–	–	–	–	–	–
Foundry	5	–	–	–	–	2	–	2	–	1	–	–	–	–	–	–	–
Iron and Steel Works	3	–	–	–	–	2	–	1	–	–	–	–	–	–	–	–	–
Lead Works	3	–	–	–	–	1	–	1	–	1	–	–	–	–	–	–	–
Smelters	2	–	–	–	–	1	–	1	–	–	–	–	–	–	–	–	–
All others	3	–	–	–	–	1	–	–	–	1	–	1	–	–	–	–	–
Totals	46	1	1	–	–	18	–	9	–	11	–	6	–	–	–	–	–

Gas and Fume Poisoning

There were 77 cases investigated: 70 men and 7 women. Fourteen of these occurred in garages and 9 in establishments used for the manu-

facture of refrigerators. There were 8 in paper manufacturing; 7 in the making of chemicals; 4 in the textile industry and 4 in tanneries. Six occurred in the building trades. Table given below contains cases by industries and the age and sex of employees.

Gas and Fume Poisoning Cases Investigated during the Year Ending November 30, 1930, by Industry, Age and Sex

Industry	Total Cases	16–18 M.	16–18 F.	18–20 M.	18–20 F.	21–30 M.	21–30 F.	31–40 M.	31–40 F.	41–50 M.	41–50 F.	51–60 M.	51–60 F.	61+ M.	61+ F.	Fatal M.	Fatal F.
Garages	14	–	–	2	–	6	–	5	–	–	–	1	–	–	–	–	–
Refrigerator Makers	9	–	–	2	–	6	–	1	–	–	–	–	–	–	–	–	–
Paper	8	–	–	–	–	–	–	1	–	2	–	4	–	1	–	–	–
Chemical	7	–	–	–	–	3	–	2	–	–	–	2	–	–	–	–	–
Contractors and Builderss	6	–	–	–	–	2	–	3	–	1	–	–	–	–	–	–	–
Textile	4	–	–	–	–	1	–	3	–	–	–	–	–	–	–	–	–
Telephone Company	4	–	–	–	2	–	1	–	1	–	–	–	–	–	–	–	–
Tannery	4	–	–	–	–	1	–	1	1	–	–	1	–	–	–	–	–
Shoe Manufacturing	3	–	–	1	–	–	1	1	–	–	–	–	–	–	–	–	–
Pyroxylin Plastics	2	–	–	1	–	1	–	–	–	–	–	–	–	–	–	–	–
Gas and Electric Companies	2	–	–	–	–	–	–	1	–	1	–	–	–	–	–	–	–
Metal Finishing	2	–	–	–	–	1	–	1	–	–	–	–	–	–	–	–	–
Fireworks and Explosives	2	–	–	–	–	2	–	–	–	–	–	–	–	–	–	–	–
Ice and Cold Storage	2	–	–	–	–	1	–	1	–	–	–	–	–	–	–	–	–
Painters and Decorators	2	–	1	–	–	1	–	–	–	–	–	–	–	–	–	–	–
Miscellaneous	6	–	–	–	–	1	–	–	–	2	–	2	–	1	–	–	–
Totals	77	–	1	6	2	26	2	20	2	6	–	10	–	2	–	–	–

Typical cases of this disease in the handling of chemicals included workman mixing sand and slaked lime and sodium chlorate with hydrocloric acid; overcome by zinc oxide fumes while holding a torch in acetylene welding inside of a tank; inhaling fumes from a mixture of kerosene and carbon tetrachloride; from the use of gasoline in washing parts of pump before painfing; aniline dyes escaping into the workroom from enclosed piping; concentrated sulphur gas from heavy chemicals.

In the building trades other cases included men doing caisson work; steam shovel operator overcome by fumes discharged from exhaust pipe; tunnel worker inhaling gas fumes resulting from the explosion of dynamite; others inhaled carbon monoxide fumes from salamanders used in drying plaster.

In the textile industry cases of this description included the inhalation of chlorine gas; carbon monoxide fumes from a gasoline engine in the finishing room of a carpet company and fumes from mixing colors in certain processes in a printing company.

In garages, employees affected by carbon monoxide gas discharged from exhaust pipes of automobiles; fumes escaping in connection with repairing a tractor with the motor running; in operating "Duco" spraying machine in the painting of automobiles.

In the manufacture of refrigerators, methyl chloride poisoning occurred; metal finishers in cleaning parts with a solution of nitric acid were affected; others involved the manufacture of fireworks and operations where nitric acid is extracted from cellulose; in the shoe industry, where a formula is used for cleaning shoes; in municipal gas plants, where sewer gas escaped; in splicing cables in railroad conduits, where slow leakage of gas occurred; in the manufacture of pyroxylin plastics; in tanneries, where fusil oil was used for seasoning; in beamhouses where hydrogen sulphide was generated; in gas and electric companies, where asphyxiation from illuminating gas took place.

Chrome Poisoning

There were 5 cases of chrome poisoning investigated. All of these were men. Four occurred in the leather trade and 1 in a nickel-plating estab-

lishment. The causation of injury in these cases was as follows:

In a tannery an employee handled skins which had been soaked in chrome solution, and both arms became sore from the drippings. In this establishment rubber gloves and gauntlets are worn, when it can be done, as a means of preventing injury of this type. Rubber boots and aprons are also available for use.

An employee was unloading a carload of sheepskins, when he sustained a slight laceration on the left hand. Immersing the hand in liquid used to tan the skins, a rash resulted. The attending physician diagnosed the condition as "chrome bites, due to getting chemicals on his hands." All precaution is taken in this establishment to prevent injuries of this kind.

Working on a pulling-out machine in a leather finishing establishment, an employee handled skins which had been soaked in chrome solution. Gloves were provided for the employee to use, but he failed to do so. A slight laceration on his left hand was affected by this solution. The attending physician diagnosed the illness as "chrome ulceration and chrome bites." In this establishment new employees are instructed to report any cuts or scratches for immediate treatment, and gloves, aprons and rubber boots are provided and worn by the employees.

In a nickel-plating establishment an employee sustained chrome acid poisoning. He worked at a plating tank which was equipped with a lateral exhaust and ventilation appeared to be satisfactory. Masks are supplied to the operators in this establishment and gloves are available for their use. The face and neck of the employee were irritated by the acid fumes as he stooped low over the tank.

While engaged in the chrome tanning of cowhides, an employee was required to weigh and measure the dry chrome. He shoveled 250 pounds at a time in a batch of tan liquor. Not wearing gloves, the skin of his arm and hands was inflamed by the dry, irritant powders. It was suggested to this concern that the chrome handlers should wear long sleeved gloves and that the sodium bichromate should be well moistened before being shoveled.

The period of incapacity for work was brief in all of these cases. Compliance prevailed in these plants with the statutory requirements protecting the health of employees.

Industrial Anthrax Poisoning

There were nine cases of this occupational disease investigated by the department during the year. All of these were men employed in the hide and leather trades. One was fatal. This employee worked for a brokerage concern who engaged in the business of importing hides and wool. These materials came from South America and other distant ports and included cowhides and wool from the Argentine Republic, which were stored in warehouses at the waterfront in the port of Boston. It was found in the investigation that there was a record of handling and weighing 450 bundles of wet, salt cowhides and 14 bales of camels' hair and 47 bales of wool a few days prior to the onset of the disease.

Becoming aware of a painless lesion on the back of his neck, an employee 56 years of age entered the Boston City Hospital for examination and treatment, and, after diagnosis of anthrax poisoning he failed rapidly, despite injections of serum, dying forty-eight hours afterwards. An autopsy by the medical examiner revealed conditions of oedema and a characteristic pathology and bacilli of anthrax.

In the beamhouse of a leather finishing establishment, 3 cases of this industrial disease occurred. One of these, a man 30 years of age, worked at sorting the raw hides, which were imported from China and India. A pustule appeared on the right foot, which was excised at the hospital, and serum given the employee, who made good recovery.

Another was a laborer 61 years of age, who worked on a washing machine which was used in a process employed in cleaning the skins.

Some of the water from this machine splashed into his left eye and a swelling of the head and neck resulted, a small ulcer appearing on the outer border of the left eye. From cultures taken at the site of infection, it was found that anthrax bacillus was present in the blood. There was quick recovery in this case.

The other employee in this group worked as a laborer in the beamhouse, handling the imported goatskins. Noticing a sore on the left side of his face, he reported this to the management and was given immediate hospital treatment. An excision was made on a small pustule on the left cheek. Serum was given and quick recovery was made. In this plant workmen are provided with rubber boots, aprons and gloves and other means known for the prevention of anthrax. An adequate first aid room is installed and provided with the necessary equipment. Physical examination is given employees, with coöperation between workman and employer in this connection. Instructions are given the foreman to warn the employees about the symptoms of anthrax poisoning and the necessity of prompt treatment in all cases of abrasions, lacerations or skin appearances indicating pustule development. Regular inspection is made of this plant, and coöperation is received in maintaining a high standard of sanitary conditions.

In a tannery establishment, an employee 36 years of age, who worked at weighing and counting skins imported from Pampa, South America, complained of illness to the foreman, who immediately sent him to the hospital for treatment, where an anthrax lesion was removed by a wide, deep excision. The anti-anthrax serum was given intravenously on the day of the operation and good recovery was made.

The other cases were marked by good response of the incapacitated employees to the treatment for this disease. Periods of time lost were brief and the character of the illness mild. In plants engaged in the tanning and finishing of leather, there is regular supervision of employment conditions by the inspection force of this division. Employees are instructed to use rubber gloves and proper clothing and to have immediate physical examination if lesions or other skin disturbances appear. During the year an illustrated poster was issued by the department and hung in a conspicuous place in each of these establishments. Among the suggestions it contained for educating the employee in relation to this disease of occupation were the following:

"ANTHRAX IF *PROMPTLY* AND *PROPERLY* TREATED CAN BE CURED

Be careful Handling Hides and Skins. Report without delay to the first aid room, or to your doctor, any sore, boil or unusual looking pimple which might appear upon your body. Be sure to tell your doctor you work in a tannery or that you handle hides and skins.

DEPARTMENT OF LABOR AND INDUSTRIES
473 STATE HOUSE, BOSTON."

Pneumoconiosis

There were eight cases of this disease investigated, one of which was fatal. All but one of these occurred in the granite-cutting industry. The fatal case concerned an employee 59 years of age, who had worked seven years at this trade for his last employer. He worked in a shed provided with good ventilation, and respirators and goggles were available. Surfacing machinery and stone-cutting lathes were connected with a blower system which removed the dust. A specialist in pulmonary diseases diagnosed his illness as pneumoconiosis with tuberculosis.

In two other cases employees 56 and 52 years of age respectively worked in a granite-polishing shop. Each workman had thirty years' experience

in the stone-cutting trade. One had worked for fifteen years on a small surfacing machine and frequently used hand tools. The other worked on monuments, using hand chisels, bush hammers and pneumatically air-driven tools and drills. In the shop an exhaust system for removing dust was connected with the surfacing machine operations. Suitable respirators were provided for the workmen.

Employed as a foreman for an asbestos textile corporation, an employee 39 years of age was advised by his physician to stop work as he was affected with pneumoconiosis asbestos (magnesium silicate). This the physician ascribed as due to the inhalation of asbestos dust in the course of the employee's work. The machines in this plant were all connected with an efficient exhaust system and an additional blower equipment provided to ventilate the workroom. Coöperation has been received by this department for a number of years from this concern in keeping the dust hazard in the plant reduced to the lowest minimum.

In the four remaining cases were included men who worked at finishing granite blocks; at polishing and finishing the edges and sides of stone, using both hand driven and pneumatic tools; at surface grinding and in lettering monumental stones. In all these cases medical authorities certified that disease was caused by the inhalation of stone dust.

Tuberculosis

There were six cases of pulmonary tuberculosis, one ending fatally. In this case a workman 53 years of age, married, was employed in the granite industry on a surfacing machine and was exposed to the inhalation of granite dust. Contracting a cough, he had no other symptom of illness until a hemorrhage occurred. He was treated by physicians for a period of two months and then died. The medical examiner conducted an autopsy, and his findings gave the cause of death as stone cutters' tuberculosis. The insurance company disputes that the employee sustained an injury arising out of and in the course of his employment and denies liability. The determination of this issue has not yet been made. There was a total of 140 men employed in the plant where this man worked at the time of his death. Exhaust system to remove granite dust generated by surfacing machinery was in operation.

An operator of a rough surfacing machine in a granite shed was seized with a paroxysm of coughing, which later incapacitated him for work. He failed rapidly, losing thirty pounds in weight. A physician diagnosing his case found conditions indicating silicosis and tuberculosis. An X-ray examination at the hospital established extensive infiltration of the lungs, extending from the bases to the apices. The difficulties arising in the determination of facts in such cases are well indicated in an opinion given by an impartial physician in this case, who acted for the Massachusetts industrial accident board. He said:

> "This man has advanced pulmonary tuberculosis, involving almost the entire left lung. The X-ray which I looked at shows this tubercular condition, but does not show any definite evidence of pneumoconiosis. It was rather difficult to obtain a history from this man, but from the story which I did get it is my opinion that he has had this tuberculosis for many years and that it has been gradually progressing. Exposure to granite dust would increase the tubercular process, but there is no definite evidence of inhalation of granite dust, either clinically or according to the X-ray in this case. I believe that he probably received some degree of aggravation from his occupation, but that this has probably been compensated for by his enforced rest. The prognosis is poor and he is totally incapacitated at the present time, and I believe he should be in a sanitarium under treatment."

The industrial accident board member who acted in this case made the following decision:

> "From all the medical evidence I find the employee has not sustained the burden of proving that the inhalation of sand dust has caused or aggravated his condition, therefore his claim for compensation must be denied."

The employee appealed from this decision and made application to the industrial accident board for a hearing on review, but shortly afterward entered into a lump sum settlement with the insurer, which was approved by the department of industrial accidents as the law requires. Approximately one hundred men worked in this plant. Machines are equipped with exhaust devices to remove dust at the point of origin. Good ventilation is provided and the workshop is maintained in a sanitary condition.

An employee of this group worked in a shed where sulphuric acid was used and was exposed to the inhalation of gas in the manufacture of the product. Examination by his physician indicated the presence of extensive tuberculosis in the left lung. After a period of three months' treatment as an outpatient of the hospital he was discharged as restored to health. Frequent inspection has been made of this establishment for many years. There is good coöperation with the department in protecting the health of the employees. Helmets are provided for the workmen, who may be exposed to the inhalation of gaseous fumes, and sanitary conditions maintained in the plant.

Two sandblasters who worked in the same foundry are included in these cases. There is evidence in the history of each, showing disagreement on the issue as to whether the disease arises out of and in the course of employment. This concern maintains an elaborate safety organization of its own. Mechanical engineers inspect the machinery and the work place. Safety committees are organized and meet frequently, and high standards prevail in keeping the entire plant on a basis of a low accident rate.

The janitor of a city hall building was required to clean and take care of a room used by the board of health as a tuberculosis clinic. One of his duties was to collect and destroy the cloths with sputum on them, used by the patients. His physician certified that he suffered from pulmonary tuberculosis, and it is contended that he sustained an injury arising out of and in the course of his employment.

Other Dust Diseases

There were eight in this classification: six men and two women. Two of these were silicosis and both occurred in the granite trade. One employee, 55 years of age, worked as a granite finisher. He used pneumatic hand tools and was required to stand close to his work while dust was generated. The other was an employee 52 years of age who had worked in the business for about thirty years. In the establishment where these men were employed an exhaust system was provided and the stone cut out of doors. The period of incapacity was brief in each case.

The others included a woman employee who worked at bundling rags brought to the place of employment from bleacheries. Her physician stated that the inhalation of dust from the rags caused occupational asthma.

An eighteen year old boy, who worked on a sole scouring machine in the shoe trade, was incapacitated for a week because dust from the machine entered his lungs.

Bronchitis was said to be the cause of the illness of another employee who worked at paint spraying. Although furnished with a respirator and working in a room provided with ventilation, the employee developed a cough which was attributed to swallowing "Duco."

An employee in a chemical manufacturing establishment, who mixed various materials, including acids, which caused the generation of a dust condition, sustained an irritation of the lungs. Respirators are provided for employees in the establishment where he worked and rubber gloves furnished for use in the handling of materials. Bronchitis from the inhalation of cyanide dust afflicted an employee who was engaged in mixing dried fertilizer containing nitrate of soda, sulphate of ammonia, potash, phosphates and phosphoric acid. In this establishment precautions are taken to protect the health of employees. Physical examination of workmen takes place and the plant is maintained in good condition.

Employed as a sorter in a laundry establishment, a woman 31 years of age suffered from an eruption which appeared in the front and back of her neck and extended to other parts of the body. A skin specialist and impartial physician, to whom she was sent for examination, gave the following opinion:

> "There is no reason to expect any industrial relationship in this disease."

The laundry in which she worked was provided with good ventilation and sanitary conditions were maintained.

Miscellaneous Cases

Seven miscellaneous cases were investigated. These included 3 employees who suffered from arthritis as a result of conditions existing in their employment. One worked as a plumber's helper in a refrigerator room of a cold storage plant, and he complained of painful knees, wrists and elbows. Another worked in a porcelain enameling company as a sandblast operator, suffering from painful joints, loss of weight, fever, anaemia and weakness. The third was employed as a flat wire roller, and he contracted a pain in the back with spinal stiffness and spasm.

Occupational neuritis, with wrist drop and loss of function of right hand, afflicted an employee in the tailoring trade; while a sandcoating machine operator suffered from paralysis and no occupational condition appeared to be responsible for his illness.

Diagnosed as suffering from actinomycosis, a shoecutter 75 years of age died suddenly. It was said that in the course of his work he handled tanned finished leather which had previously lain upon a floor with untreated, infected hides. The presence of actinomycosis bovis, causing an infectious disease occuring in cattle, was found in a bacteriological examination. The attending physician stated there was casual relation between injury and death. Two years prior to onset of disease, employee was X-rayed and at that time his lungs were mottled from stone dust, arising in his employment with the use of pneumatic hand tools. The inspection records of this plant indicate that work was done in the open shed and that respirators and goggles were provided for the employees.

SUNDAY WORK AND ONE DAY'S REST IN SEVEN

In the inspection of manufacturing and mercantile establishments, inquiry was made in relation to statutory provision requiring twenty-four consecutive hours of rest in every seven consecutive days for the employees. Schedules containing the list of names of those required or allowed to work on Sunday and designating the day of rest for each were examined and verified. This included time books showing the names and addresses of all employees and their hours of work each day.

Special attention was given to the employment of persons under twenty-one years of age in establishments exempted from the One Day's Rest in Seven Law. These places included hotels, restaurants, drug stores and concerns engaged in the transportation, sale and delivery of foods. It was necessary to issue 190 orders in this connection, and these were complied with.

In manufacturing establishments where Sunday work was done under the provisions of law which permit such employment in an emergency that could not have reasonably been anticipated, the facts were examined carefully by the inspectors and coöperation received in these cases from police officials when permits to do Sunday work were granted. The enforcement of the statute permitting an employee in certain lines of employment to do on Sunday the usual work of his occupation, except at his request to waive the right to twenty-four consecutive hours without labor in the six days ensuing, figured prominently in the work of the inspection service during the year. In this connection workmen and management were interviewed and a system of hiring employees under these conditions checked up. General compliance with this statute in nearly all of the industries to which it applied seemed to prevail. Among some of these, tours of duty were arranged to allow employees to have every Sunday off from the work of their occupation.

PURE DRINKING WATER

All industrial establishments shall provide fresh and pure drinking water, to which their employees shall have access during working hours. To secure compliance with these requirements, 100 orders were issued by the department during the year. These were nearly all in small workshops and were complied with.

Making regular inspection in plants where the drinking water came from pipes connected with the water supply for fire protection purposes was continued. Investigation was made in these places to determine if danger to health of employees existed in this connection. This was necessary to protect the drinking water supply from pollution by river water, and in some cases new equipment in pipe lines was provided to accomplish this result. Coöperation in this work was received from the department of public health, and information was made available to this division for its use concerning plants where connections existed between the drinking water supply and an auxiliary in manufacturing establishments. These plants included woolen and cotton mills, paper mills, bleacheries and dyeworks, leather finishing companies and tanneries.

LOCKERS

There was a total of 24 orders issued by the department, requiring the installation of lockers, and the equipment required by statute was promptly made available for use. The places of employment to which the orders applied included manufacturing and mercantile establishments and hotels. In some tanneries the existing installation was found to be inadequate for the number of workmen employed, and additional receptacles were supplied.

HOME WORK

There was a total of 251 licenses granted to persons for the making, altering or finishing of wearing apparel in a room or apartment of a tenement or dwelling house. The practice of familiarizing concerns engaged in this business with the requirements of the law prohibiting the employment of children after certain hours fixed by statute in, about or in connection with manufacturing establishments was continued and their responsibility made plain if illegal employment of children was permitted in connection with the work done for them. Many firms coöperated with the division in furnishing names and addresses of persons desiring licenses to do home work, and gave assurance that applicants would be given employment. In this way the wasting of time in the investigation by the inspector was avoided. Licenses were issued only in each case where sanitary conditions prevailed in the room or apartment used for making the wearing apparel. Most of these were concerned with the

fabrication of neckwear, aprons, hosiery, knit goods, sweaters and similar articles. Monthly statements are received regularly from firms hiring, employing or contracting with a member of a family doing such home work, giving the names of the persons employed as required by law.

SURVEY OF SANITARY AND HEALTH CONDITIONS IN WASTE SHOPS

One hundred of these establishments were inspected in making this investigation. There was a total of 948 employees at work—549 men and 399 women. Of this number but 17 were under sixteen years of age. Children in this age group were employed in sorting cloth trimmings, cotton or woolen rags or paper waste. There was no apparent exposure to health dangers in the course of their employment. The establishments included in this study are those in which waste cloth and rags of all kinds are sorted, graded, and, in some instances, laundered and baled; places where the greater part of the material handled is waste paper products, which are sorted, graded and baled, and establishments sorting, grading and baling waste cotton or wool obtained from textile mills. Rags and waste cloth for use in the first named type of establishment, which may be referred to as "Class A", are usually obtained from ragpickers and junk dealers or tailoring establishments. The stock is sorted and graded by hand, and articles such as buttons, hooks and eyes, buckles and other things of this nature are removed. The work is generally done by women in a sitting position, and the product is then baled and sold to converters. Ready market is found for some of this material for use as wiping cloths for cleaning machinery, and it is used in large volume in the manufacture of paper. Nearly all establishments of this class are small, with few employed and located in the part of a main building ordinarily used for storage purposes. Toilet and washing facilities in some of them were found not properly maintained and the passageways and means of approach and exits obstructed by the storing of material. In the plants where the products consist of cleaning and wiping cloths, the stock is washed or laundered before the sorting or grading process begins. The operation of machinery in these places is not attended with many serious hazards to the employees. All the equipment used for baling purposes is operated by hand. The danger to the health of the employees is chiefly from dust contained in the rags or waste brought in by ragpickers or junk dealers, but this is almost negligible in the trimmings brought from tailoring shops. Very little record of occupational disease was found in this investigation. Most of the absenteeism was due to causes found frequently in any kind of employment, including colds, grippe, cramps and indigestion. Orders were issued by the department and suggestions made by the inspector to correct unclean conditions of the toilets, shop premises, windows and stairs and also to safeguard certain dangerous places, such as the openings in passageways and well holes on the workroom floors.

In another type of these establishments, which may be called "Class B", waste paper is the material handled. This is obtained from various sources, including sanitary departments of cities and towns, newspaper offices and establishments where office records, books, time tables and other articles of this general description are obtained. This material is sorted and graded by women who stand at a mechanically operated conveyor belt and take from it the products which have a market value. The rubbish left is discharged at the end of the belt and usually burned in an incinerator, or otherwise discarded. The materials are then sorted and graded and prepared for shipment to paper manufacturers by a process of baling for which power machines are used and operated by men. Mechanical hazards in these places are few, and work place dangers were found to be in connection with floor openings which lacked the safeguards of hand rails or self-closing hatches.

The material handled in the type of establishment, which may be designated as "Class C" for the purpose of this study is obtained principally from the cotton and woolen mills. This is usually sorted by women, who work at a wire mesh table or bench top which permits the refuse or unused material to fall into a receptacle or container which is emptied for use again as required. The process of employment here is the same as in other waste shops, consisting of sorting, grading and baling. The cotton reclaimed under these circumstances may be used in the coarser grades of cotton manufacturing, such as twine, mops, clothes lines and is also occasionally utilized in the manufacture of nitro cellulose and gun cotton. The woolen products are used in the making of coarse woolen articles, such as carpets and rugs or converted into wool shoddy and used in the fabrication of cheaper grades of woolen cloth. The use of picking machines in some of these shops adds to the mechanical hazards found in the other places.

The health hazards are associated with dust arising from the handling of materials, but there is very little disease of an occupational nature among the employees.

In this study there was a record of 127 cases of illness among the employees: 67 men and 60 women. These resulted in incapacity of the employees for work for a total of 1,722 days. Bronchitis, neuritis, gastritis and rheumatism were responsible for lost time in some of these cases. Workers occasionally receive cuts from discarded razor blades, broken glass, tin cans and chinaware, and there is danger in the injury becoming infected through failure to apply first aid treatment promptly. The nature of the employment in these establishments is such as to make it exceedingly difficult to maintain clean work places. The employees were urged to wear respirators while sorting and cutting dusty, woolen garments, and in some of the operations the wearing of goggles was suggested to prevent particles flying into the eyes. Some of the firms willingly co-operated in this connection. General ventilation was provided in some establishments through good windows, monitor roofs and open doors, and exhaust equipment was installed in the plants where it was necessary to control humidity and acid fumes. Floors of wood, cement and sheet metal were found in fair condition, and repairs were made in a few places in this connection upon verbal orders issued by the inspector. The department issued orders to 71 of the establishments visited, and these were promptly complied with. They were as follows: Employment certificates and posting list of minors, 6; securing educational certificates, 10; posting hours of labor for women and children, 5; permitting forty-five minutes for lunch period for women and minors, 1; furnishing seats for women and girls, 17; better lighting facilities, 7; toilet and washing facilities, 4; providing pure drinking water, 6; installing medical chest, 17; abolishing use of common drinking cup and towel 9; free egress, 5; unguarded machinery and openings, 58.

SANITARY INSPECTION OF FOUNDRIES

Special investigation was made in 113 of these establishments. Conditions of employment and their relation to the health of employees were given careful attention. This included a study of the industrial processes and the means provided to safeguard the operatives from the dangers arising out of and in the course of their work. The scope of the inquiry was confined to plants in which iron, steel. copper, tin, zinc, aluminum or where compositions containing any of these metals were melted and poured into dry or green sand moulds for the making of castings. It also included all mouldings, core-making, melting, cleaning and drying rooms used in connection therewith and rooms used for washing and toilet facilities.

Specific details receiving attention in this survey were mainly the following: Protecting employees from exposure to harmful drafts at the entrance to the foundry by the installation of covered vestibule in the cold seasons; maintaining gangways from which aisles lead to the moulding floors of the

foundry, so as to provide safe ingress and egress for employees while molten metal is being carried away in the passageway and keeping these places free from undue dampness or obstructions of any nature during the work of pouring; in removing smoke, steam, gases or dust arising from operations of the foundry which are dangerous to the health or eyes, by requiring the use of hoods, ventilators, fans or other mechanical means when the natural circulation of air fails to accomplish this end; cleaning or chipping castings in separate rooms or sections of the shop exclusively used for this purpose; removing dust arising from the operation of tumbler mills through the means of exhaust systems, and enclosed space for sandblasting operations or the blowing-out of cores, and furnishing respirators, helmets or hoods; in furnishing adequate lighting facilities and heat; in the drying of hand and bull ladles in ovens or outside the foundry or under ventilating hood or stack or by means of suitable oil or gas burners, and providing sheet iron shields in iron foundries for use in covering bull ladles, and in furnishing suitable facilities for the drying of employees' clothing in the wash or locker room or a place used exclusively for this purpose; in maintaining sanitary conditions, including toilet rooms, with washbowls, sinks or other set appliances connected with running hot and cold water and adequate in number for the employees, together with individual lockers; in maintaining ladles, tongs, yokes, skimmers and slag hoes in safe condition for the pouring of molten metal and providing for their daily inspection; in the protection of employees removing crucibles containing molten metal from furnaces or handling such crucibles; in the enforcement of the regulations for core-making rooms in which women are employed, and other special requirements for brass foundries.

Of these establishments visited, 52 were iron foundries; 44 brass; 8 iron and brass; 6 brass and aluminum; 1 aluminum; 1 lead and 1 nickel chromium. There were 4,228 persons employed in these places, of whom 4,176 were men and 52 women. Seventeen were minors under eighteen years of age—all boys. Four of the women employees worked in the foundries and 48 did office work. There was but one child under sixteen employed—an errand boy in one of the foundries.

These metals were found in use during the investigation: Aluminum, brass, chromium, copper, iron, lead, magnesium, manganese, phosphorus, tin and zinc. The abrasives employed in some of the work processes included emery, moulding sand and silica; and the acids comprised sulphuric, nitric and hydrofluoric. Types of gases and fumes arising out of this employment were carbon dioxide, carbon monoxide, naphtha, wood and denatured alcohol, lacquer and smoke. It was found necessary to issue 56 orders in these establishments, requiring compliance with rules and regulations of the department relating to safe and sanitary working conditions in core-rooms. Nineteen of these pertained to dust removal from emery wheels; 18, to toilet and washing facilities; 6, providing medical chests; 4, abolishing the use of common towel and drinking cup; 3, to provide lockers; 3, to safeguard machinery; 2, to provide better lighting facilities and 1 to obtain an educational certificate. These were immediately attended to and the law promptly complied with. Ventilation was found to be generally good and usually provided by the use of monitor roofs, doors and windows or by the installation of exhaust fans. Dust produced by the use of tumbling barrels was removed by the use of blower system. The practice of using enclosed cabinets, designed especially for the purpose of sandblasting, is coming into greater use. These are connected with a dust-removal system or by the use of helmets which provide a constant flow of fresh air for the protection of the operator. Toilet and washing facilities were found adequate in most places, while conditions in a few indicated neglect in maintenance.

WEEKLY PAYMENT OF WAGES

Failure to secure wages earned imposes on the employee and his family a hardship that frequently deprives children of proper nourishment and

care. Many of these cases came to the attention of the division during the year and were given prompt attention. To bring relief to those in needy circumstances, special effort was made to cause the employer to pay promptly the sum due. The amount involved was nearly always small, and to secure legal assistance would make the transaction an unprofitable one for the employee. There was a total of 2,222 claims alleging violation of the weekly payment law. Under the system followed by the division, personal interviews take place with the complainants and facts secured indicating where the work was done and the amount of money due. The procedure of writing to the employer in relation to the unpaid wages was continued and in many cases this resulted in payment being made at once. In the handling of these complaints effort is made to prevent the loss of time on the part of the employees. Through correspondence they are kept advised of the progress made and this practice was followed usually when continuances were granted in court to enable the employer to pay the wages earned by the workman.

The division continues to furnish useful information to employees who become involved in bankruptcy proceedings. This includes instructions concerning the filing of the proof of claim within the statutory period and other provisions necessary to participate in the dividends. Persons who complained of irregularities in connection with the assignment of their wages, or alleged that the sum withheld from their earnings, under the trustee process, was larger than the amount provided by law, came frequently to the office for information. The statutory requirements were made known to the employees, and if error in procedure under either process was apparent, the employer was notified if it appeared that violation of the weekly payment law had taken place. Employees are advised by police authorities and court officials to file complaints for violation of the weekly payment law with the department of labor and industries. Labor organizations and other agencies follow this procedure. This provided the division with a large amount of work requiring care and attention in detail. Many cases require special investigation by the field worker of the division in securing information necessary for prosecution in court. This included personal calls upon employers, which usually resulted in their agreement to pay the amount due workmen. Many cases of this type were involved in conflicting claims arising from disputes over the rates of wages agreed upon. When it was necessary, these parties were brought into conference in the office and requirements of the weekly payment law made known to them. This procedure usually led to a satisfactory settlement and compliance with the law took place. Employees are advised that their remedy is in the civil court when it is apparent that the case is not within the jurisdiction of the department.

The outstanding causes for non-payment of wages appear to be the same from year to year. Usually it is the employer with small capital, who undertakes jobs at such a low figure that he is unable to pay employees weekly the wages earned. Then, in many cases, misunderstanding as to the rates of pay and terms of employment gives rise to confusion between workmen and employer, and failure to pay wages weekly occurs. Occasionally, the vicious practice of making payments by check without sufficient funds on deposit to provide for payment of amount due is the basis of the employee's complaint.

The sum of $59,876.99 was paid by employers to workmen, after notification was given that complaint was filed with the department, alleging failure to comply with the requirements of the weekly payment law.

EMPLOYMENT ON PUBLIC WORKS

The building of roadways and the construction of walls and bridges by persons contracting with the commonwealth were given systematic supervision by the inspection force while these projects were under construction. This was also done in connection with the erection of schoolhouses and other structures by cities and towns, county buildings and additions to state insti-

tutions. During the year 198 contracts were awarded by state departments for construction work at bid prices, which totaled approximately $17,000,000. This involved the employment of approximately 7,000 laborers, workmen and mechanics at the peak of the season during the summer and early fall. Under the Massachusetts statutes, contractors engaged in the construction of public works are required to give preference to citizens for employment in the following order: First, to citizens of the commonwealth, who have served in the army or navy of the United States in time of war and have been honorably discharged therefrom or released from active duty therein and who are qualified to perform the work to which the employment relates; secondly, to citizens of the commonwealth generally, and, if they cannot be obtained in sufficient numbers, then to citizens of the United States.

Another provision of law in the same section makes this requirement: No town, in the construction of public works, shall be required to give preference to veterans not residents of such town over citizens thereof. Because of the acute condition of unemployment which prevailed, inspectors of the division co-operated with contractors in securing workmen who were competent to meet the requirements of the law for such employment. In this connection the assistance of public departments in cities and towns, American Legion posts and welfare agencies was solicited for employees who qualified, in order to place citizens at work. The national government added to the state's appropriation on some of these projects, and in such cases the Massachusetts statute, with its classified preference for employment, is superseded by the federal law, which provides that the contractor is required to give preference in employment only to honorably discharged soldiers, sailors and marines; but no other preference or discrimination among citizens of the United States is permitted. Under these circumstances there is widespread confusion in relation to the requirements for employment in the construction of public works. During the year 153 complaints were received, alleging violations of statutes in this connection, and investigation showed 58 of these were made because of failure to understand the requirements of law.

In pursuance of complaints filed with the department, investigation was made in 18 cases, alleging that the customary and prevailing rate of wages was not paid to mechanics employed in the construction of public works. These included work done by carpenters, hoisting engineers, ironworkers and plasterers. Most of these were in the employ of non-Massachusetts contracting firms who brought their working crew into localities in this state where a higher rate of wages was paid for this work. In this connection the investigation of wages paid mechanics in localities where the public work was under construction was made by the inspector and this information used in conferences held with the contractors. In each case this resulted in the payment to these employees of the prevailing rate in the district and compliance with the requirements of the law. There was a total of 865 inspections made in projects concerning the construction of public works, and 229 orders were issued by the department. These were promptly complied with.

Eight-Hour Law

Chiefly in connection with road work and the sewer departments in cities and towns, 17 complaints for alleged violation of the eight-hour law were made with the department. Some of these were concerned with the construction of projects in connection with the building of main travel arteries, and others involved dangers arising from traffic conditions and the excavation of the road bed. In most of these it was found that an extraordinary emergency prevailed, in which there was danger to property, life, public safety or public health, and under these circumstances employees were lawfully employed in working more than 48 hours a week. Co-operation was secured with many contractors concerning the employment of workmen under these circumstances, and decisions made by the commissioner in this connection were readily complied with.

During the year 17 complaints were received, alleging violations of statute

in this connection, and investigation showed that 6 of these were made because of failure to understand the requirements of the law. This was due in many cases because city and town contracts were made, giving preference to local citizens in this employment. In some of these it was stipulated that the citizens of the city or town must be given preference in employment to the exclusion of citizens from other parts of the commonwealth. This was largely responsible for the excessive number of complaints in connection with the citizens' preference law. Inspectors representing the department of public works gave daily supervision to these projects, which included enforcing contract specifications concerning the employees. Acknowledgment is made here of the co-operation received from these officials in this connection.

LABORERS' VACATIONS

There was a total of 4 complaints alleging failure to grant laborers' vacations in cities and towns which accepted the provisions of chapter 217 of the acts of 1914, and these were duly investigated. These concerned laborers who worked thirty-two weeks in the aggregate in the preceding calendar year and were discharged or left their employment early in the year following. The provisions of this law are construed to mean that under these circumstances the laborer is not entitled to a vacation. The division is advised that a person should be employed at the time the vacation commences. The word "vacation" implies a time of rest between periods of employment and may not properly be used in reference to a period of rest after employment ceases. (See opinion of the department of the attorney-general under date of February 8, 1928.) Difficulties in the existing law continue to interfere with its satisfactory enforcement in some of the cities of the commonwealth. In some parts of the state which accepted the laborers' vacation law, there was no concurrent action by the city council as is required in chapter 131 of the Acts of 1927. This law provides that the city council in any city which accepted the laborers' vacation law may determine that a vacation of two weeks without loss of pay shall be granted to every person regularly employed by such city as a common laborer, skilled laborer, mechanic or craftsman. Prompt action was taken in several cases by municipal authorities to comply with these requirements after conference with the division.

LEGAL DEPARTMENT

During the year the department prosecuted 768 persons for various violations of the labor laws. Of the total number, 546 complaints were for nonpayment of wages. Of the latter class, 115 cases were dismissed after wages had been paid to the complainants. Of the total number of complainants, 582 defendants were found guilty, 22 pleaded nolo and were found guilty and 49 were found not guilty. A tabulation of the cases follows:

Total number of prosecutions	768
Disposition:	
Guilty	604
Dismissed	115
Not guilty	49
Total	768
Character of Offence:	
Women and Minors:	
Overtime employment	65
Minors:	
Employed under 14 years of age	5
Employed without certificates	31
Employed in prohibited trades and on dangerous machinery	2
Illegal public exhibition	5
Under 18 employed driving motor vehicle	1
Under 16 employed after 6 P.M.	2

Time Notices:	
Not posted	15
Improperly posted	2
Working at time other than stated	41
Public Works:	
Overtime employment	16
Violations of citizens' preference act	5
Violations of veterans' preference act	2
Failure to pay weekly	1
Illegal Advertising	1
Health and Sanitation:	
Improper toilets and washing facilities	5
Violations of statute as to means of egress and locked doors	4
Failure to provide toilets	1
Building Operations:	
Violation of rules	18
Non-payment of Wages	546
Total	768

BRANCH OFFICE ACTIVITIES

Available to factory officials and employees who seek information regarding the labor laws, branch offices are located in Fall River, Lawrence, Worcester, Springfield and Pittsfield. In these offices they secure time notices for women and minors and schedules in connection with the one day's rest in seven law, bulletins containing rules and regulations for safeguarding machinery, toilet and washing facilities, foundry requirements, lighting industrial establishments, and bulletins for the prevention of accidents in building operations are on hand for distribution to the public. Here complaints alleging violation of the weekly payment law are received and given prompt attention. Workmen and employees engage in conference with the inspector when disputes arise as to the amounts due, and these are settled nearly always to the satisfaction of the interested parties. Advice is given to the complainants and the correct procedure explained if civil action is necessary to recover the wages due. Daily reports are received from each of the branch offices, indicating the type of service given to the community. Problems concerning the employment of women and minors, the issuance of employment and educational certificates, requirements of the one day's rest in seven law, information as to citizens' preference in public employment and the prevailing rate of wages in the construction of public works reach the office for attention. Telephone calls from industrial establishments, requesting information in relation to the requirements of law, provide the opportunity to give prompt assistance in important matters. Workmen call to secure information in regard to injuries sustained in their employment. Careful record is made of all the facts in each case and then brought to the attention of the department of industrial accidents for disposition. This practice enables both departments to co-operate in giving service to injured employees, which is appreciated.

CO-OPERATION WITH OTHER AGENCIES

The experience of the division in the inspection of work places and the investigation of problems dealing with health and safety in industry has been made available to federal and state departments and co-operation in this connection readily given. Definite contribution in this respect included membership on the "Safety Code for Woodworking Plants" as revised in

1930 (See United States Bulletin 519); "Safety Code for Mechanical Power-Transmission Apparatus" (See United States Bulletin 463); "Safety Code for Forging and Hot Metal Stamping" (See United States Bulletin 451); "Safety Code for the Use, Care and Protection of Abrasive Wheels" (See United States Bulletin 527). It is now represented on the sectional committee for the safety code on industrial sanitation, under the sponsorship of the United States Public Health Service. The personnel of the division has given freely of its effort to furnish information to all interested groups.

In September, prominent part was taken at the annual meeting of the International Association of Industrial Accident Boards and Commissions at Wilmington, Delaware, and later in the year at an accident prevention congress under the auspices of the Maine Labor Department at Augusta. Addresses have been made to chamber of commerce meetings in many parts of the state, to service club gatherings and to labor and other civic organizations. Meetings of shop crew safety committees have been attended and the accident experience incidental to their own trade, with suggestions for the prevention of personal injury, presented to appreciative groups representing management and employees.

REPORT OF THE BOARD OF CONCILIATION AND ARBITRATION

Edward Fisher, *Chairman;* Herbert P. Wasgatt, Samuel Ross

On December 1, 1929, there were pending four joint applications for arbitration; during the year 68 joint applications were filed, making a total of 72. Decisions were rendered in 58 cases, nine were settled or withdrawn and five cases are now pending. In addition one petition for normality certificate was filed.

Conciliation

No labor troubles have arisen during the year which have assumed the proportions of a very serious controversy, either as to duration of time or numbers of employers or employees involved. Most of these disputes have been adjusted through the services of the Board; in many instances without cessation of work, in others with only a brief period of interruption of employment. Although no very serious controversy has arisen, nevertheless the Board has been very active; business conditions, commonly referred to as "business depression," calling for still further efforts upon its part and that of its agent through advice and assistance to aid employer and employees in adjusting matters relative to working conditions whereby the business might be continued. In some instances the Board has been faced with the problem of the business removing from the community and even from the commonwealth. In this line of endeavor, through the co-operation of employer and employees and also of representatives of the community, the Board has secured readjustments and mutual concessions which afforded the employer an opportunity to secure a portion of the existing business and retain his employees at work part time at least. Through such efforts those engaged in industrial pursuits, both employer and employees, have become acquainted with the broad field covered by the activities of the Board and have had a realization of the services which may be rendered to them, especially during such periods as those of the present year, through advice, assistance and co-operation. It is such contact, carried on without publicity, which encourages both employer and employee not only to accept but also to seek the good offices of the Board. To carry on such work successfully requires not only confidence, respect and mutual co-operation but also the united efforts of all concerned, extending in some instances to the community itself. It is very reassuring to note the spirit with which these problems have been approached by the parties directly interested in the endeavor to find a fair and equitable solution.

At the close of the year, through the discharge of an employee by the New England Telephone and Telegraph Company, a controversy arose which the

Board is investigating at the request of His Excellency the Governor. A conference of the parties has been called for December 1.

Arbitration

The Board rendered decisions on 58 applications; of these three were pending from last year, the balance being applications filed in the current year.

Normality

One petition for normality certificate was filed, and after a hearing and an investigation a certificate was issued.

List of Industries Affected and Principal Differences in Conciliation and Arbitration Cases

Conciliation

Industries Affected: Bill-posting, building, foundry, municipal employment, paper, restaurant, shoe, tanning, telephone, transportation, wool.
Principal Differences: Wages, working conditions, discharge.

Arbitration

Industries Affected	*Issues Arbitrated*
Coal	Wages
Shoe	Wages, discharge

REPORT OF THE MINIMUM WAGE COMMISSION

Edward Fisher, *Chairman;* Herbert P. Wasgatt; Samuel Ross, Ethel M. Johnson, *Acting Director*

Outline of Functions

The duties of the minimum wage commission under the law comprise the following functions: investigating the wages of women employees in occupations where there is reason to believe that the wages of a substantial number are below the requirements of healthful living; establishing wage boards to recommend minimum rates for women and minors; entering wage decrees based on the recommendations of the boards; inspecting to determine compliance with the decrees; and publishing the result of the findings.

An account of the work carried on during the year is given in the sections that follow.

Work in 1930

Since 1927 the field work conducted in connection with the minimum wage law has been confined for the most part to inspections to determine compliance with the wage decrees. There are now twenty-one decrees in effect covering as many different occupations. Approximately 75,000 women and girls are employed in the occupations covered by wage decrees.

In addition to the regular inspections under the decrees, numerous reinspections are required in connection with the adjustment of non-compliances found at the time of the original inspection. Many inspections are also made on complaint. This occasionally involves visiting the complainants to secure additional information or to explain the limitations of the law. Another phase of the work that arises in connection with the inspections is interviewing applicants for special licenses.

Wage board candidates are also interviewed as part of the field work when wage boards are being formed. There have been no wage boards in session during the year. It was the opinion of the commission that on account of the serious business depression of the past year conditions of employment were far from normal. For that reason no wage studies as the basis for the formation of new boards have been initiated.

Publications

The only publication issued during the year is the reprint from the annual report of the department giving the outline of the work of the division of minimum wage.

Advertisement of Non-Compliances

The commission is by law required to publish names of firms that fail or refuse to comply with its decrees. Publication is regarded as a last resort. Every effort is made to secure adjustment of non-compliances without publication. An account of the procedure taken in non-compliance cases prior to publication is given in the report for 1929.

Table 1.—Advertisement of Non-Compliances Under Minimum Wage Decrees, 1930

Occupation	Date of advertisement	Establishments in most recent inspection	Records in most recent inspection	Cases of Non-compliance		Per cent of Non-compliances	
				Firms	Cases	Firms	Cases
Candy	12/30/29						
Men's Furnishings	12/30/29	109	5756	2	56	1.8	1.0
Office Cleaners	12/31/29	69	4299	8	193	11.6	4.5
Muslin Underwear	1/3/30	362	2207	2	3	.6	.1
Laundry	8/9/30	91	2480	4	15	4.3	.6
	8/30/30	337	5890	16	291	4.7	4.9
Electrical Equipment	8/10/30	74	5434	6	272	8.1	5.0
Druggists' Compounds	11/15/30	60	638	2	18	3.3	2.8
Stationery Goods	11/3/30	71	3747	2	15	2.8	.4

Number of firms advertised during the year: 42, with 863 cases of non-compliance.

Decrees and Cases

In 1930 the commission published non-compliances under eight decrees as indicated in Table 1. This shows the extent of such advertisement. In each instance the number of firms it was necessary to publish represents only a small proportion of all the firms inspected in the occupation. The same is true in regard to non-compliance cases.

Advertisements this year represent the second publication in the case of the electrical equipment and supplies decree; the third in the case of the candy, men's furnishings, muslin underwear, office and other building cleaners, and stationery goods and envelopes decrees; and the fourth in the case of the druggists preparations and laundry decrees.

Arrangements are being made for publication in December, 1930, under the boot and shoe cut stock and findings, paper box, jewelry and retail store decrees.

Inspections

Decrees

Inspection was conducted in 1930 under nineteen decrees. This includes, however, inspection on complaint, partial inspection and that in connection with other decrees. Complete inspection was made during the year under seven decrees: bread and bakery products; canning and preserving and minor lines of confectionery; electrical equipment and supplies; men's furnishings; millinery; muslin underwear; and women's clothing.

Inspections on complaint or incidental to the regular work, or reinspection preliminary to publication of non-compliances were made in one or more establishments under each of the following decrees: brush, druggists' preparations and proprietary medicines, office and other building cleaners, paper box, retail stores, toys and games and stationery goods and envelopes.

Re-inspections

In connection with the inspection work, wage records for tabulation were secured for 30,896 women and girls in 1,014 firms. In addition a large num-

Table 2.—Weekly Rates of 695 Women employed in 96 Establishments engaged in the manufacture of Boot and Shoe Cut Stock and Findings in Massachusetts: By Type of Establishment. (Cumulative)

Type of Establishment	Number and Per Cent of Workers with Rates													
	Under $9	Under $10	Under $11	Under $12	Under $13	Under $14	Under $15	Under $16	Under $17	Under $18	Under $19	Under $20	$20 & Over	Total
Trimmings and Findings														
Number	4	11	22	27	63	91	136	167	183	186	196	197	10	207
Per cent	2.0	5.3	10.6	13.0	30.4	44.0	65.7	80.7	88.4	89.9	94.7	95.2	4.8	100
Leather Heels														
Number	–	–	–	2	13	19	44	80	84	84	91	92	4	96
Per cent	–	–	–	2.1	13.5	19.8	45.8	83.3	87.5	87.5	94.7	95.8	4.2	100
Stays														
Number	–	–	–	–	5	8	10	13	25	31	45	47	6	53
Per cent	–	–	–	–	9.4	15.1	18.9	24.5	47.2	58.5	84.9	88.7	11.3	100
Sole Leather and Cut Soles														
Number	–	1	5	6	14	14	16	21	26	30	37	39	8	47
Per cent	–	2.1	10.6	12.8	29.8	29.8	34.0	44.7	55.3	63.8	78.7	83.0	17.0	100
Innersoles														
Number	–	–	–	–	6	7	15	23	28	29	34	34	6	40
Per cent	–	–	–	–	15.0	17.5	37.5	57.5	70.0	72.5	85.0	85.0	15.0	100
Shanks														
Number	–	–	–	–	9	22	26	30	30	31	35	35	–	35
Per cent	–	–	–	–	25.7	62.9	74.3	85.7	85.7	88.6	100.0	100.0	–	100
Rands														
Number	1	1	2	3	20	21	22	28	29	29	29	29	1	30
Per cent	3.3	3.3	6.6	10.0	66.7	70.0	73.3	93.3	96.7	96.7	96.7	96.7	3.3	100
Counters														
Number	1	1	4	8	10	11	17	20	21	21	21	21	3	24
Per cent	4.2	4.2	16.7	33.3	41.7	45.8	70.8	83.3	87.5	87.5	87.5	87.5	12.5	100
Miscellaneous														
Number	2	2	6	7	34	41	60	107	125	130	148	151	12	163
Per cent	1.2	1.2	3.7	4.3	20.9	25.2	36.8	65.6	76.6	79.8	90.8	92.6	7.4	100
TOTAL:														
NUMBER	8	16	39	53	174	234	346	489	551	571	636	645	50	695
PER CENT	1.2	2.3	5.6	7.6	25.0	33.7	49.8	70.4	79.3	82.2	91.5	92.8	7.2	100

Data regarding rates were not available for 737 women in 13 establishments.

ber of re-inspections were made. These include revisits to secure adjustment of non-compliances found in the course of the regular inspection; also reinspection preliminary to publication in the case of firms with cases pending from previous years. These reinspections alone represent visits to 417 establishments and checking up 3,482 cases.

In some instances several visits for various reasons are necessary in connection with the inspection of a single establishment. If non-compliances are found, reinspection is made later to see if they are adjusted. In some instances several inspection visits are necessary to assist in the adjustment of non-compliances.

These numerous revisits and reinspections are not included in the establishments recorded in the inspection tables. In all, 2,724 establishment visits were made by agents of the commission during the year.

Boot and Shoe Cut Stock and Findings Decree

The initial inspection under the boot and shoe cut stock and findings decree was completed in the early part of this year. This decree became effective June 1, 1929. It establishes a minimum rate of $14.65 a week for women of ordinary ability with special rates of $12.00 and $10.00 for inexperienced workers according to age.

This industry includes the manufacture of counters, innersoles, shanks, rands, heels other than wood, shoe trimmings, ornaments, and similar products. Most of the plants engaged in this work are located near the shoe centers.

The inspection under this decree was started in June, 1929, and completed in February, 1930. The principal part of the inspection came in the fall and winter.

*Rates and Earnings**

In the course of the inspection wage records for tabulation of weekly earnings were secured for 1,432 women in 109 establishments and weekly rates for 695 women in 96 establishments. Rates by type of establishment are shown in Table 2. From this it will be seen that there is wide difference in wages in the various lines.

Comparison of the wage situation at the time of the investigation preliminary to the entrance of the decree and at the inspection directly after the decree went into effect is shown in Table 3. Notwithstanding the general busi-

Table 3.—Comparison of Rates in Boot and Shoe Cut Stock and Findings Establishments in Massachusetts at Investigation Prior to Decree and at Subsequent Inspection

	Number and Per Cent of Workers with Rates											
	Under $9	Under $10	Under $11	Under $12	Under $13	Under $14	Under $15	Under $16	Under $17	Under $18	$18 & Over	Total
Investigation, 1924–1925												
Number	9	13	25	44	99	117	186	228	259	280	70	350
Per cent	2.6	3.7	7.1	12.6	28.3	33.4	53.1	65.1	74.0	80.0	20.0	100
1st Inspection, 1929												
Number	8	16	39	53	174	234	346	489	551	571	124	695
Per cent	1.2	2.3	5.6	7.6	25.0	33.7	49.8	70.4	79.3	82.2	17.8	100

Date of Decree—June 1, 1929. Minimum rate—$14.65. Special Rates—$12.00, $10.00

*Earnings should not be confused with rates. Rates are definite amounts indicated for full time employment either by hour, day or week. Earnings are what employees are paid as shown by payrolls. In many cases earnings are less than rates would indicate the employees should receive because of their working part time.

Table 4.—Weekly Earnings of 5890 Women Employed in 58 Establishments engaged in the Manufacture of Electrical Equipment and Supplies in Massachusetts: By Occupations (Cumulative)

(Based on inspection of payroll records for the period December, 1929 through February, 1930)

Occupations	Number and Per Cent of Workers Earning:—													
	Under $9	Under $10	Under $11	Under $12	Under $13	Under $14	Under $15	Under $16	Under $17	Under $18	Under $19	Under $20	$20 & Over	Total
Assemblers														
Number	382	474	606	713	846	996	1,179	1,306	1,371	1,468	1,539	1,624	274	1,898
Per cent	20.1	25.0	31.9	37.6	44.6	52.5	62.1	68.8	72.2	77.3	81.1	85.6	14.4	100
Bench Workers														
Number	111	137	178	228	340	414	549	647	722	820	910	967	247	1,214
Per cent	9.1	11.3	14.7	18.8	28.0	34.1	45.2	53.3	59.5	67.5	75.0	79.7	20.3	100
Machine Operators														
Number	114	129	179	237	292	337	411	477	554	626	697	734	119	853
Per cent	13.4	15.1	21.0	27.8	34.2	39.5	48.2	55.9	64.9	73.4	81.7	86.0	14.0	100
Winders														
Number	88	136	180	218	267	306	402	460	527	565	597	642	131	773
Per cent	11.4	17.6	23.3	28.2	34.5	39.6	52.0	59.5	68.2	73.1	77.2	83.1	16.9	100
Inspectors														
Number	26	40	62	83	116	145	194	235	257	275	288	298	52	350
Per cent	7.4	11.4	17.7	23.7	33.1	41.4	55.4	67.1	73.4	78.6	82.3	85.1	14.9	100
Factory Clerical														
Number	1	5	9	37	49	73	102	130	158	177	200	213	34	247
Per cent	.4	2.0	3.6	15.0	19.8	29.6	41.3	52.6	64.0	71.7	81.0	86.2	13.8	100
Press Operators														
Number	19	30	45	58	71	84	108	131	147	168	177	188	46	234
Per cent	8.1	12.8	19.2	24.8	30.3	35.9	46.1	56.0	62.8	71.8	75.6	80.3	19.7	100
Packers														
Number	36	50	72	88	117	149	165	177	189	210	217	221	9	230
Per cent	15.7	21.7	31.3	38.3	50.9	64.8	71.7	77.0	82.2	91.3	94.3	96.1	3.9	100
Miscellaneous														
Number	5	13	17	24	31	36	48	50	56	60	64	68	23	91
Per cent	5.5	14.3	18.7	26.4	34.1	39.6	52.7	54.9	61.5	65.9	70.3	74.7	25.3	100
TOTAL														
NUMBER	782	1,014	1,348	1,686	2,129	2,540	3,158	3,613	3,981	4,369	4,689	4,955	935	5,890
PER CENT	13.2	17.2	21.5	28.6	36.2	50.4	53.6	61.3	67.6	74.1	79.6	84.1	15.9	100

Table 5.—Weekly Rates of 2260 Women Employed in 55 Establishments engaged in the Manufacture of Electrical Equipment and Supplies. By Establishments (Cumulative)

(Based on inspection of payroll records for the period December, 1929 through February, 1930)

Establishments	Per Cent of Workers with Rates:—													
	Under $9	Under $10	Under $11	Under $12	Under $13	Under $14	Under $15	Under $16	Under $17	Under $18	Under $19	Under $20	$20 & Over	Total
No. 1	–	–	–	–	25.1	25.5	42.3	66.5	73.6	74.9	80.3	84.9	15.1	100
No. 2	–	–	–	–	1.0	6.2	21.2	36.8	48.2	61.1	70.5	77.2	22.8	100
No. 3	–	–	–	–	–	–	23.1	38.5	44.2	50.0	61.5	75.0	25.0	100
No. 4	–	–	–	–	–	–	33.7	61.1	76.2	85.3	88.5	90.1	9.9	100
No. 5	–	–	–	–	–	–	100.0	100.0	100.0	100.0	100.0	100.0	–	100
No. 6	–	–	–	–	–	–	35.0	52.6	61.3	67.2	72.3	89.8	10.2	100
No. 7	–	–	–	–	–	–	50.0	50.0	70.0	70.0	80.0	80.0	20.0	100
No. 8	64.8	67.6	73.7	78.2	88.8	93.3	95.5	97.2	97.2	97.8	98.9	99.4	.6	100
No. 9	–	–	–	–	–	–	21.1	35.7	54.4	66.1	73.7	80.1	19.1	100
No. 10	–	–	–	–	7.7	57.0	83.1	91.5	97.9	99.3	99.3	99.3	.7	100
No. 11	–	–	–	–	–	–	5.3	10.5	17.5	49.1	63.2	71.9	28.1	100
No. 12	–	–	–	–	15.6	15.6	78.1	90.6	93.8	93.8	96.9	100.0	–	100
No. 13	–	–	–	–	22.3	30.1	60.2	77.7	86.4	94.2	95.1	97.1	2.9	100
No. 14	–	–	–	–	6.7	6.7	6.7	13.3	26.7	26.7	33.3	73.3	26.7	100
No. 15	–	–	–	–	48.9	55.3	91.5	95.7	97.9	97.9	97.9	97.9	2.1	100
No. 16	–	–	–	–	75.0	75.0	95.0	100.0	100.0	100.0	100.0	100.0	–	100
No. 17	–	–	–	–	–	–	–	–	–	22.2	24.4	33.3	66.7	100
No. 18	–	–	–	–	50.0	50.0	93.7	93.7	100.0	100.0	100.0	100.0	–	100
No. 19	–	–	–	–	–	–	57.1	71.4	85.7	85.7	85.7	100.0	–	100
No. 20	–	–	–	–	–	–	14.3	14.3	71.4	78.6	85.7	92.9	7.1	100
No. 21	–	–	–	–	–	5.0	100.0	100.0	100.0	100.0	100.0	100.0	–	100
No. 22	–	–	5.1	5.1	30.8	53.8	59.0	100.0	100.0	100.0	100.0	100.0	–	100
No. 23	–	–	–	–	–	–	19.0	19.0	85.7	85.7	85.7	85.7	14.3	100
No. 24	–	–	–	–	–	–	–	–	18.2	18.2	51.5	54.5	45.5	100
No. 25	–	–	–	–	6.7	6.7	73.3	93.3	96.7	96.7	96.7	96.7	3.3	100
No. 27	–	–	–	–	17.2	17.2	55.2	79.3	82.8	86.2	93.1	93.1	6.9	100
No. 28	–	–	–	–	71.4	71.4	85.7	85.7	100.0	100.0	100.0	100.0	–	100
No. 29	–	–	–	–	–	–	–	–	22.2	22.2	22.2	88.9	11.1	100
No. 30	–	13.3	46.7	46.7	73.3	73.3	80.0	93.3	96.7	96.7	96.7	96.7	3.3	100
No. 31	–	–	–	–	–	–	41.7	75.0	91.7	91.7	100.0	100.0	–	100
No. 32	–	–	–	–	63.2	68.4	100.0	100.0	100.0	100.0	100.0	100.0	–	100
No. 33	–	4.2	4.2	4.2	37.5	41.7	87.5	95.8	100.0	100.0	100.0	100.0	–	100
No. 34	–	–	–	–	–	9.1	18.2	36.4	95.4	95.4	100.0	100.0	–	100
No. 35	–	–	–	–	–	–	28.6	35.7	64.3	92.8	92.8	100.0	–	100
No. 36	–	–	–	–	–	–	100.0	100.0	100.0	100.0	100.0	100.0	–	100
No. 37	–	–	–	–	–	–	37.5	37.5	62.5	62.5	62.5	75.0	25.0	100

Table 5.—Weekly Rates of 2260 Women Employed in 55 Establishments engaged in the Manufacture of Electrical Equipment and Supplies. By Establishments (Cumulative)—Concluded.

Establishments	Per Cent of Workers with Rates:—													
	Under $9	Under $10	Under $11	Under $12	Under $13	Under $14	Under $15	Under $16	Under $17	Under $18	Under $19	Under $20	$20 & Over	Total
No. 38	–	–	11.8	11.8	64.7	64.7	76.5	88.2	94.1	94.1	100.0	100.0	–	100
No. 39	–	–	–	–	16.7	16.7	100.0	100.0	100.0	100.0	100.0	100.0	–	100
No. 40	–	–	–	–	–	–	–	–	100.0	100.0	100.0	100.0	–	100
No. 41	–	–	–	–	28.6	28.6	100.0	100.0	100.0	100 0	100.0	100.0	–	100
No. 42	–	–	–	–	–	–	–	20.0	40.0	40.0	70.0	80.0	20.0	100
No. 43	–	–	–	–	–	–	–	22.2	33.3	44.4	44.4	100.0	–	100
No. 44	–	–	–	–	–	–	80.0	80.0	80.0	100.0	100.0	100.0	–	100
No. 45	–	–	25.0	87.5	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	–	100
No. 46	–	–	–	–	–	–	–	100.0	100.0	100.0	100.0	100.0	–	100
No. 47	–	–	–	–	–	–	50.0	100.0	100.0	100.0	100.0	100.0	–	100
No. 48	–	–	–	–	–	–	62.5	62.5	75.0	75.0	87.5	100.0	–	100
No. 49	–	–	–	–	–	–	75.0	100.0	100.0	100.0	100.0	100.0	–	100
No. 50	–	–	–	–	33.3	100.0	100.0	100.0	100.0	100.0	100.0	100.0	–	100
No. 51	–	–	–	–	–	–	33.3	33.3	100.0	100.0	100.0	100.0	–	100
No. 52	–	–	–	–	–	–	–	25.0	100.0	100.0	100.0	100.0	–	100
No. 55	–	–	–	–	–	–	–	–	50.0	50.0	50.0	50.0	50.0	100
No. 57	–	–	–	–	–	–	–	–	–	100.0	100.0	100.0	–	100
No. 58	–	–	–	–	–	–	–	–	–	–	100.0	100.0	–	100
No. 59	–	–	–	–	–	–	33.3	33.3	100.0	100.0	100.0	100.0	–	100
TOTAL	5.1	5.6	6.8	7.3	18.4	23.5	48.4	62.4	73.2	78.9	83.4	88.7	11.3	100

Data regarding rates were not available for 2,630 women including all in three establishments.

ness depression there is an improvement in the wages of the women and girls who were receiving less than the minimum rate prior to the entrance of the decree as an analysis of the tables show.

Electrical Equipment and Supplies Decree

Two inspections have been made under the electrical equipment and supplies decree which went into effect June 1, 1928. This decree provides a minimum rate of $14.00 a week for women with six months' experience in the occupation and a special rate of $12.00 a week for beginners.

The inspection this year was started in December, 1929, and completed in February, 1930. Wage records for the tabulation of earnings were secured for 5,890 women employed in 58 establishments. Weekly earnings of these women by occupations are shown in Table 4.

*Rates and Earnings**

The effect of the business depression is doubtless reflected in the earnings. Approximately one-half of the women (50.4 percent) earned less than $14.00 a week; and more than one-fourth (28.6 percent) earned less than $12.00 a week.

More than one-half of the women recorded were on piece work. Weekly rates for tabulation were secured for 2,260 women in 55 establishments. These are shown in Table 5. Nowhere is the contrast in the wages paid by different firms in the same industry more striking than here.

Comparison of the rates in the occupation at the time of the investigation before the decree was entered and at subsequent inspections was made in Table 6. At the investigation three-fifths (59.0 percent) had rates for full-time employment under $14.00 a week, the present minimum rate. One-fifth (22.7 percent) had rates under $12.00 a week.

The majority of the firms in the industry have accepted the decree and are meeting its provisions. Non-complying firms were advertised in August of this year. An account of that action is given in the section on publications in this report.

Disposition of Inspection Cases

Disposition of Non-Compliances Pending From Previous Years

At the beginning of the fiscal year, there were outstanding from previous years, 3,482 cases of non-compliances in 417 firms. Most of these came under the retail store decree—2,050 cases in 272 firms, the majority of which had been advertised one or more times.

There were also 337 cases in 34 laundries, 182 in an electrical equipment and supplies establishment, 178 in 22 boot and shoe cut stock and findings establishments, 147 in 12 men's furnishings establishments, 117 in 19 paper box factories, and 63 in six corset factories.

The remaining cases were divided among a few firms under each of the following decrees: bread and bakery products, candy, canning and preserving and minor lines of confectionery, druggists' preparations, jewelry, knit goods, men's clothing, muslin underwear, office cleaning, stationery goods and envelopes, toys, games and sporting goods, and women's clothing.

Reinspection was made in all of the firms with cases pending to try and secure adjustment; or, when this could not be effected, as a preliminary to publication. In connection with the advertisement of non-compliances, it is the intent of the commission to have reinspection made within a reasonable time prior to publication.

Adjustments

So large a part of the cases were in firms previously published, comparatively few adjustments were effected. Wages were raised to meet the provisions of the decrees in 275 cases in 91 firms. Adjustment by changing type of work or method of payment or hours so that the employees were enabled

*See note on Page 54.

Table 6.—Comparison of Rates in Electrical Equipment and Supplies Establishments in Massachusetts at Investigation Prior to Decree and at Subsequent Inspections.

	Number and Per Cent of Workers with Rates													
	Under $9	Under $10	Under $11	Under $12	Under $13	Under $14	Under $15	Under $16	Under $17	Under $18	Under $19	Under $20	$20 & Over	Total
Investigation, 1925														
Number	41	74	92	149	277	387	475	547	577	602	621	632	24	656
Per cent	6.3	11.3	14.0	22.7	42.2	59.0	72.4	83.3	88.0	91.8	94.7	96.3	3.7	100
Inspection, 1928														
Number	160	202	233	286	726	867	1,196	1,382	1,583	1,661	1,755	1,905	194	2,099
Per cent	7.6	9.6	11.1	13.6	34.6	41.3	57.0	65.8	75.4	79.1	83.6	90.8	9.2	100
Inspection, 1929														
Number	116	126	153	166	415	532	1,093	1,411	1,654	1,784	1,886	2,005	255	2,260
Per cent	5.1	5.6	6.8	7.3	18.4	23.5	48.6	62.4	73.2	78.9	83.5	88.7	11.3	100

Date of decree—June 1, 1928. Minimum rate—$14.00. Special rates—$12.00 and 10.50 weekly.

Table 7.—Disposition of Cases of Non-Compliance Pending from Previous Years

(C — Cases; E — Establishments)

Situation and Disposition of Cases	Boot and Shoe Cut Stock and Findings		Bread and Bakery Products		Candy		Canning and Preserving and Minor Lines of Confectionery		Corset		Druggists' Preparations and Proprietary Medicines		Electrical Equipment and Supplies		Jewelry		Knit Goods		Laundry	
	C.	E.	C.	E.	C.	E.	C.	E.	C.	E.	C.	E.	C.	E.	C.	E.	C.	E.	C.	E.
Pending from previous years	178	22	2	1	69	4	9	1	63	6	41	5	182	1	42	7	31	2	337	34
ADJUSTMENT*																				
Wages raised	3	2	–	–	6	2	9	1	2	1	5	1	–	–	15	4	–	–	19	4
Earning minimum on piece work or on commission basis	4	2	–	–	–	–	–	–	8	2	–	–	–	–	3	3	–	–	–	–
Hours reduced or change of work	–	–	–	–	–	–	–	–	1	1	–	–	–	–	–	–	–	–	–	–
Adjustment reported or promised	–	–	–	–	–	–	–	–	–	–	3	1	–	–	–	–	–	–	9	2
Special license, special license type or similar case	–	–	–	–	5	1	–	–	1	1	–	–	–	–	–	–	–	–	–	–
Piece rate ruling	–	–	–	–	1	1	–	–	17	2	–	–	–	–	–	–	1	1	–	–
Incorrectly recorded by investigator	2	1	–	–	–	–	–	–	1	1	10	1	–	–	–	–	–	–	6	2
Left	50	14	2	1	1	1	–	–	12	4	9	1	–	–	14	5	–	–	12	4
Discharged	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Firm bankrupt, out of business, or moved out of State	1	1	–	–	–	–	–	–	21	1	–	–	182	1	–	–	–	–	–	–
ADVERTISED IN 1930	–	–	–	–	56	2	–	–	–	–	14	2	–	–	–	–	–	–	291	16
PENDING	118	14	–	–	–	–	–	–	–	–	–	–	–	–	10	1	30	1	–	–

*See notes on Table 9.

Table 7.—Disposition of Cases of Non-Compliance Pending from Previous Years—(Concluded)

(C — Cases; E — Establishments)

Situation and Disposition of Cases	Men's Clothing		Men's Furnishings		Muslin Underwear		Office Cleaning		Paper Box		Retail Store		Stationery Goods and Envelopes		Toys, Games and Sporting Goods		Women's Clothing		Total	
	C.	E.	C.	E.	C.	E.	C.	E.	C.	E.	C.	E.	C.	E.	C.	E.	C.	E.	C.	E.
Pending from previous years	43	3	147	12	25	8	10	5	117	19	2,050	272	50	6	68	4	18	5	3,482	417
ADJUSTMENT*																				
Wages raised	–	–	1	1	–	–	–	–	8	6	175	63	6	2	18	1	8	3	275	91
Earning minimum on piece work or on commission basis	–	–	8	4	1	1	–	–	13	8	8	5	8	3	3	2	–	–	56	30
Hours reduced or change of work	–	–	1	1	–	–	2	1	2	1	2	2	1	1	–	–	–	–	9	7
Adjustment reported or promised	–	–	–	–	–	–	–	–	1	1	156	27	–	–	–	–	–	–	169	31
Special license, special license type or similar case	–	–	–	–	1	1	–	–	4	2	–	–	–	–	–	–	–	–	11	5
Piece rate ruling	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	19	4
Incorrectly recorded by investigator	–	–	–	–	–	–	5	2	–	–	3	1	–	–	–	–	–	–	27	8
Left	5	1	7	2	2	1	2	2	36	9	769	134	20	6	46	4	9	3	996	192
Discharged	–	–	–	–	–	–	–	–	4	2	1	1	–	–	–	–	–	–	5	3
Firm bankrupt, out of business, or moved out of State	–	–	–	–	–	–	–	–	–	–	84	5	–	–	–	–	1	1	289	9
ADVERTISED IN 1930	–	–	128	8	15	4	1	1	–	–	–	–	15	2	–	–	–	–	520	35
PENDING	38	3	2	1	6	1	–	–	49	6	852	177	–	–	1	1	–	–	1,106	205

*See notes on Table 9.

Table 8.—Disposition of New Cases of Non-Compliance in Firms Where Cases Were Pending from Previous Years

(C — Cases; E — Establishments)

Situation and Distribution of Cases	Boot and Shoe Cut Stock and Findings		Corset		Druggists' Preparations		Jewelry		Laundry		Men's Clothing	
	C.	E.	C.	E.	C.	E.	C.	E.	C.	E.	C.	E.
Number of cases of non-compliance	63	13	14	3	8	2	15	2	6	1	9	2
ADJUSTMENT*												
Wages raised	–	–	5	2	–	–	2	1	3	1	–	–
Earning Minimum on piece work	–	–	1	1	–	–	–	–	–	–	–	–
Adjustment reported or promised	5	2	–	–	4	1	–	–	–	–	–	–
Special license, special license type or similar case	–	–	–	–	–	–	–	–	–	–	–	–
Piece rate ruling	–	–	–	–	–	–	–	–	–	–	–	–
Left	1	1	8	1	–	–	1	1	3	1	2	1
Laid off	–	–	–	–	–	–	1	1	–	–	–	–
Out of business	2	1	–	–	–	–	–	–	–	–	–	–
ADVERTISED 1930	–	–	–	–	4	1	–	–	–	–	–	–
PENDING	55	9	–	–	–	–	11	1	–	–	7	2

*See notes on Table 9.

Table 8.—Disposition of New Cases of Non-Compliance in Firms where Cases were Pending from Previous Years
(Concluded)

(C — Cases; E — Establishments)

Situation and Disposition of Cases	Men's Furnishings		Office Cleaning		Paper Box		Retail Store		Stationery Goods and Envelopes		Toys, Games and Sporting Goods		Total	
	C.	E.	C.	E.	C.	E.	C.	E.	C.	E.	C.	E.	C.	E.
Number of cases of non-compliance	65	2	2	1	96	11	748	120	31	3	12	2	1,069	162
ADJUSTMENT*														
Wages raised	–	–	–	–	–	–	10	1	8	2	2	1	30	8
Earning Minimum on piece work	–	–	–	–	–	–	–	–	2	1	–	–	3	2
Adjustment reported or promised	–	–	–	–	8	2	88	15	–	–	–	–	105	20
Special license, special license type or similar case	–	–	–	–	1	1	–	–	–	–	–	–	1	1
Piece rate ruling	–	–	–	–	–	–	–	–	1	1	–	–	1	1
Left	–	–	–	–	4	2	7	3	12	3	–	–	38	13
Laid off	–	–	–	–	1	1	–	–	–	–	10	1	12	3
Out of business	–	–	–	–	–	–	–	–	–	–	–	–	2	1
ADVERTISED 1930	65	2	2	1	–	–	–	–	–	–	–	–	71	4
PENDING	–	–	–	–	82	6	643	104	8	1	–	–	806	123

*See notes on Table 9.

Table 9.—Summary of Adjustments in Connection with Inspections in 1930 under Massachusetts Minimum Wage Decrees

(C — Cases; E — Establishments)

Situation and Disposition of Cases	Boot and Shoe Cut Stock and Findings[1]		Bread and Bakery Products		Brush [1]		Candy [2]		Canning and Preserving and Minor Lines of Confectionery		Druggists' Compounds and Proprietary Medicines[3]		Electrical Equipment and Supplies		Jewelry and Related Lines[1]		Laundry[2]		Men's Clothing[2]	
	C.	E.	C.	E.	C.	E.	C.	E.	C.	E.	C.	E.	C.	E.	C.	E.	C.	E.	C.	E.
Records for Tabulation and establishments represented	10	3	1,477	39	93	5	2,183	20	1,371	66	33	5	6,509	68	1,740	9	5,163	298	2,196	64
Compliance at Inspection	5	3	1,429	39	92	5	2,110	19	1,328	65	31	5	5,961	67	1,693	9	4,561	293	1,971	64
Establishments with full compliance and cases	3	1	639	27	56	4	639	9	1,080	53	33	4	3,971	48	1,553	6	3,156	216	652	38
Cases of non-compliance	5	2	48	12	1	1	73	11	43	13	2	1	548	20	47	3	602	82	225	26
ADJUSTMENT[4]																				
Wages raised	3	1	34	9	–	–	18	2	9	3	–	–	68	9	4	3	73	31	14	9
Earning minimum on piece work	–	–	–	–	–	–	–	–	1	1	–	–	1	1	26	1	1	1	11	4
Hours reduced; change of work	–	–	–	–	1	1	–	–	–	–	–	–	–	–	–	–	1	1	–	–
Adjustment promised or reported[5]	1	1	2	1	–	–	1	1	2	1	–	–	24	1	–	–	29	12	26	3
Covered by piece rate ruling[6]	–	–	10	2	–	–	1	1	1	1	–	–	–	–	8	1	–	–	13	6
Special license, special license type or similar case	–	–	–	–	–	–	1	1	1	1	–	–	–	–	–	–	3	2	9	4
Incorrectly recorded by investigator	–	–	–	–	–	–	–	–	3	1	2	1	5	1	–	–	7	3	3	2
Left[7]	1	1	2	2	–	–	2	2	11	8	–	–	30	6	9	2	24	14	53	12
Discharged or laid off	–	–	–	–	–	–	–	–	5	1	–	–	–	–	–	–	–	–	1	1
Firm out of business	–	–	–	–	–	–	7	1	–	–	–	–	–	–	–	–	–	–	–	–
ADVERTISED	–	–	–	–	–	–	–	–	–	–	–	–	272	6	–	–	–	–	–	–
PENDING**	–	–	–	–	–	–	43	7	10	2	–	–	148	1	–	–	464	37	95	10

[1] Work initiated previous year.
[2] Work in process at close of present year.
[3] Inspection either on complaint or in connection with other inspection work, or new firms.
[4] Does not include cases adjusted before agent's visit.*
[5] Adjustment promised or reported by firms. Agent has not revisited.
[6] Piece rate ruling:—Where great majority of employees on given process are making minimum or over, the rates are considered as conforming with decree.
[7] Some of those reported as left were probably discharged. This information however, was not given to the investigator.

*The majority of the cases are adjusted on or before the date the decree becomes effective, so that many firms have full compliance at the inspection.
**In addition to these are the cases listed as pending on Tables 9 and 10.

Table 9.—Summary of Adjustments in Connection with Inspections in 1930 under Massachusetts Minimum Wage Decrees—(Concluded)

(C — Cases; E — Establishments)

Situation and Disposition of Cases	Men's Furnishings		Millinery		Muslin Underwear		Office Cleaners[3]		Paper Box[3]		Retail Store[3]		Stationery Goods and Envelopes[3]		Toys, Games, and Sporting Goods[1]		Women's Clothing		Total	
	C.	E.	C.	E.	C.	E.	C.	E.	C.	E.	C.	E.	C.	E.	C.	E.	C.	E.	C.	E.
Records for tabulation and establishments represented	3,473	71	920	68	3,018	81	68	25	186	8	475	51	6	1	16	1	1,959	131	30,896	1,014
Compliance at inspection	2,948	70	880	67	2,529	81	57	19	166	7	343	49	5	1	12	1	1,897	131	28,018	995
Establishments with full compliance and cases	832	30	812	60	791	32	65	16	109	3	276	38	–	–	–	–	1,477	113	16,144	698
Cases of non-compliance	525	41	40	8	489	49	11	9	20	5	132	13	1	1	4	1	62	18	2,878	316
ADJUSTMENT[4]																				
Wages raised	24	13	3	2	27	16	3	3	1	1	25	7	1	1	1	1	20	11	328	122
Earning minimum on piece work	20	7	6	1	67	6	–	–	–	–	–	–	–	–	–	–	1	1	134	23
Hours reduced; change of work	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	2	2
Adjustment promised or reported[5]	–	–	2	2	11	3	–	–	–	–	5	3	–	–	–	–	1	1	104	29
Covered by piece rate ruling[6]	39	12	8	3	36	18	–	–	–	–	–	–	–	–	–	–	1	1	117	45
Special license, special license type or similar case	2	2	–	–	1	1	1	1	–	–	–	–	–	–	–	–	–	–	18	12
Incorrectly recorded by investigator	–	–	–	–	–	–	2	2	–	–	–	–	–	–	–	–	1	1	23	11
Left[7]	23	9	21	2	32	17	2	2	4	2	59	1	–	–	–	–	8	6	281	86
Discharged or laid off	–	–	–	–	–	–	2	1	–	–	–	–	–	–	3	1	–	–	11	4
Firm out of business	77	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	84	2
ADVERTISED	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	272	6
PENDING**	340	12	–	–	315	23	1	1	15	2	43	6	–	–	–	–	30	3	1,504	104

[1] Work initiated previous year.
[2] Work in process at close of present year.
[3] Inspection either on complaint or in connection with other inspection work, or new firms.
[4] Does not include cases adjusted before agent's visit.*
[5] Adjustment promised or reported by firms. Agent has not revisited.
[6] Piece rate ruling:—Where great majority of employees on given process are making minimum or over, the rates are considered as conforming with decree.
[7] Some of those reported as left were probably discharged. This information however, was not given to the investigator.

*The majority of the cases are adjusted on or the date the decree becomes effective, so that many firms have full compliance at the inspection.
**In addition to these are the cases listed as pending on Tables 9 and 10.

to earn the minimum was made in 65 additional cases. Further adjustments were reported or promised in 169 cases representing 31 establishments.

There were 19 employees in four establishments covered by the piece rate ruling; and 11 cases in five establishments that were covered by special licenses. It was found that 27 cases in eight firms had been incorrectly recorded as non-compliance.

Advertisements

The firms advertised include 520 of the cases pending at the beginning of the year, and were distributed as follows: 56 in two candy factories, 291 in 16 laundries, 193 in eight men's furnishings establishments; 15 in four muslin underwear establishments, 15 in two stationery goods and envelopes factories, 14 in two establishments manufacturing druggists' preparations, and one under the office and other building cleaners decree.

Cases Pending

There are outstanding at the close of the year 1,106 cases in 205 establishments, mainly under the retail store, boot and shoe cut stock and findings and paper box decrees. Arrangements have been made for publication under these decrees in December. An outline of the disposition of these cases is given in Table 7.

Disposition of Inspection Cases

Disposition of New Cases

In the course of the reinspection of firms with cases outstanding from previous years, 1,069 new cases were found in 162 firms. The majority of these 748 cases in 120 firms came under the retail store decree. Most of the remaining cases were in paper box factories, men's furnishings establishments, and boot and shoe cut stock and findings plants.

There were some additional cases in one or more establishments under each of the following decrees: corset, druggists' preparations, jewelry, laundry, men's clothing, office cleaning, stationery goods and envelopes, and toys, games and sporting goods.

Adjustments

As the greater number of these cases were in firms that had never complied, adjustments were secured in comparatively few instances. In 30 cases in eight firms wages were raised to meet the provisions of the decree. Adjustment was promised in 105 additional cases.

In 38 cases in 13 establishments employees who were receiving below the minimum left, and in 12 cases involving three firms, the employees were laid off. One firm went out of business during the year. Four firms in which there were 71 cases of non-compliance were advertised.

Cases Pending

There are pending at the close of the year 806* cases in 123 firms. These include 643 cases in retail stores, 82 in paper box factories, and 55 in boot and shoe cut stock and findings plants. Publication under these decrees will be made in December, 1930. An outline of the disposition of the cases under the various decrees represented is given in Table 8.

Disposition of Inspection Cases

Disposition of Cases in the Regular Inspection Work

In 316 establishments, 2,878 cases of non-compliance were found. Of this number 1,374 were settled or adjustment was promised before the close of the year. Some of the remaining cases will doubtless be adjusted in connection with the reinspections which will be made after the regular inspection work has been completed.

* It should be understood that these cases are in addition to those listed as pending from previous years, and those from the regular inspection work of the present year, The entire number of cases outstanding at the close of the year is the sum of the cases listed as pending under these several headings.

Adjustments

With respect to the cases settled, wages were raised for 328 women in 122 establishments. In 136 other cases women were enabled to earn the minimum on piece work or by reduction of hours or change of work. Adjustment was promised or reported in 104 additional cases.

There were 117 women in 45 establishments who came under the piece rate ruling. This is the provision in the case of experienced operators that where the great majority on a given operation are earning the minimum or over the rates are considered in accordance with the decree. Eighteen women in 12 establishments were covered by special license provisions.

Cases Pending

At the close of the year there are pending from the regular inspection work, 1,504 cases in 104 establishments. These are mainly under decrees where the inspection is still in progress as the candy, laundry and men's clothing decrees; or where reinspections are necessary prior to the publication, as in the muslin underwear and men's furnishings decrees; or in the case of new firms, as under the retail store decree.

The 148 cases listed as pending under the electrical equipment and supplies decree are in a new establishment. This inspection was made after the publication which followed the required inspection under that decree.

A number of cases pending under the clothing decrees are in establishments which have recently come to Massachusetts from outside the state and located in the textile centers. The low wages paid by a number of these concerns is creating a problem.

Summary

The entire number of cases handled during the year include, in addition to those in connection with the regular inspection program, the cases pending from previous years and represents more than 34,000. The total non-compliance cases are the 2,878 from the regular inspection work with the 3,482 pending at the beginning of the year and the 1,069 new cases found in the reinspections of these firms. The entire number is 7,249 cases.

Of this number 4,013 have been settled or adjustment promised before the close of the year. Wage adjustments or equivalent arrangement enabling the employees to earn the minimum were effected in 837 cases. In a number of additional instances adjustments were promised. There were 863 cases in the 42 firms advertised. There are pending at the close of the year 3,416 cases. A large part of these are under decrees listed for publication in December.*

Non-Compliances in New Establishments

A situation which causes concern has arisen in several of the textile centers within the past year or two. Firms have come to Massachusetts from other states, taken over unoccupied mill buildings, and started factories of various kinds.

In a number of instances the wages paid by these concerns are far below any minimum rate established under the wage decrees. Rates of $5, $6 and $7 a week for full-time employment are in some instances paid to women and girls, in some individual cases rates even as low as $3 and $4 a week have been found.

Some of the work, as the manufacture of men's furnishings, children's clothing, underwear and radio parts come under existing wage decrees. In other instances no decree has been established for the occupation.

This situation exists particularly in some of the textile cities. Owing to the serious business depression, it has been possible for these concerns to secure women and girls, and men and boys as well, at sub-normal rates of wages.

Many complaints have come to the commission regarding these condi-

*The fiscal year ends November 30, 1930.

tions. Efforts to secure adjustment to meet the provisions of the wage decrees have in the majority of instances been unsuccessful. It will be necessary to publish a number of firms under decrees where in the past there have been no publication or only in a few cases.

REPORT OF THE DIVISION OF STANDARDS

Francis Meredith, *Director of Standards*

Legislation Enacted in 1930

The only legislation of particular interest to this division and to local sealers of weights and measures, enacted during the session of the General Court, was chapter 139, acts of 1930, intended to correct conditions which have occasioned many complaints from autoists and traffic officers.

Occupants of waiting cars, held up temporarily at points where reconstruction of main highways was in progress, were frequently importuned by peddlers to "help the disabled veterans" by purchasing a miniature flag, a flower, or some other article of little value, the price being stated as "whatever you please to give." In other instances, cars travelling along the highways have been stopped by persons wearing a badge identifying the wearer as a constable, fireman, or licensed pedler who proceeded to solicit the occupants to purchase tickets for some exhibition or entertainment or to contribute toward some object or enterprise in which the general public have little or no interest.

The penalty of a fine not exceeding fifty dollars, provided in the new statute, should discourage this practice with its attendant annoyance and jeopardization of the safety of those travelling by automobile. The text of the law follows:—

Chapter 139

An Act Prohibiting the Interruption of Traffic Upon State Highways

> Chapter eighty-five of the General Laws is hereby amended by inserting after section seventeen the following new section:—Section 17A. Whoever, for the purpose of soliciting any alms, contribution or subscription or of selling any merchandise or ticket of admission to any game, show, exhibition, fair, ball, entertainment or public gathering, signals a moving vehicle on any state highway or causes the stopping of a vehicle thereon, or accosts any occupant of a vehicle stopped thereon at the direction of a police officer or signal man, or of a signal or device for regulating traffic, shall be punished by a fine of not more than fifty dollars.
>
> Approved March 26, 1930.

Provision for Testing Heavy-Capacity Scales

The development of motor trucks of great carrying capacity has brought about the installation of many truck-scales capable of weighing the increased loads and has emphasized the necessity of adequate apparatus for testing these modern scales so as to reveal errors which may develop with increasing loads.

In considering the problem of providing for such tests in the most economical and efficient manner it was evident that independent action by the many municipalities would result in an enormous and unnecessary duplication of expense.

On recommendation of the director a special appropriation of $7,000 was provided this year and a contract is being awarded for a heavy-capacity test truck to carry a 30,000-pound gross load. The equipment of this truck will include a special crane and winch, with live boom and all movable parts operated from power take-off with flexible connections to facilitate the handling of the standard test weights consisting of 500-pound units.

With this equipment it is proposed to visit the various cities and towns, assisting the local sealers in testing heavy-capacity scales which have never before been adequately tested because of the insufficiency of the sealers' working standards.

Division Publications

Publications issued during the year included:—

1. Report of the Director of Standards for the year ending November 30, 1929.
2. General Laws of Massachusetts relating to Weights and Measures and the Licensing, Inspection and Sale of Various Articles (As amended to July 1, 1930).
3. Bulletin No. 26, containing a synopsis of the numerous changes made in the hawkers' and pedlers' license law by chapter 349, acts of 1929; the text of chapter 139, acts of 1930, prohibiting the interruption of traffic upon state highways; regulations governing the transfer of hawkers' and pedlers' county licenses prepared by the director under statutory authority; and much other helpful information for officials and others interested.
4. Cards for housekeepers, containing brief reference tables of weights and measures; common kitchen measures (equivalents of capacity); and approximate weights of some common dry commodities per cubic foot, cupful, etc.
5. Pamphlet:—General tables of weights and measures with equivalents of customary units in terms of the metric and other systems.
6. Pamphlet:—Massachusetts Points the Way—enumerating many of the more important and progressive laws relating to weights and measures and kindred subjects upon which this commonwealth was the first to legislate.
7. Pamphlet:—Massachusetts Statute Relative to the Manufacture and Sale of Clinical Thermometers, with Rules, Regulations, Specifications and Tolerances Prescribed and Promulgated by the Director of Standards Under Authority Thereof.

Clinical Thermometers

Manufacturers authorized to seal thermometers of their manufacture are required to file with the director records of all shipments of sealed instruments. These records show sales during the year of 197,962 thermometers bearing the manufacturer's seal, of which number 115,996 were sold in Massachusetts and 81,966 in other states.

Constant supervision is exercised over sealed thermometers in order that a high degree of efficiency may be maintained in their manufacture. After inspections and tests, the authority granted three manufacturers to seal their products was temporarily suspended and thermometers intended for sale in this commonwealth were required to be first submitted to this division for test and certification. When it was demonstrated that conditions had been corrected, the suspension was removed and authority restored to these manufacturers.

Laboratory Work

Calibration of State Standards for Cities and Towns

Article	Tested	Adjusted	Sealed	Condemned
Avoirdupois weights	488	220	487	1
Metric weights	17	–	17	—
Apothecary weights	17	–	17	–
Liquid measures	11	–	11	–
Totals	533	220	532	1

Clinical Thermometers

Description	Tested	Passed	Rejected	Per Cent Passed
Massachusetts seal	1,654	1,469	185	88.81
Unsealed	4,884	4,433	451	90.76
Totals	6,538	5,902	636	90.27

Cans, Cartons and Other Containers, Measures and Weighing and Measuring Devices Submitted in Connection with Manufacturers' Applications for Approval, or for Authority to Affix the Manufacturers' Seal Thereon

Article	Tested	Accurate	Inaccurate
Cartons to be used in the sale of ice cream, oysters and other specified commodities	75	58	17
Wholesale ice cream cans	28	23	5
Wholesale milk cans	40	20	20
Milk jars	39	39	–
Oil jars	5	4	1
Glass graduates	6	3	3
Liquid measures	81	59	22
Slot weighing machines	3	2	1
Slot vending machines	3	3	–
Counter scales	1	1	–
Computing scales	11	8	3
Computing scale charts	11	7	4
Linear measure	1	1	–
Totals	304	228	76

Miscellaneous Tests

Article	Tested	Accurate	Inaccurate
Automatic test measures for gasoline pumps	42	42	–
Apple sizing rings	60	60	–
Height measuring device	1	1	–
Linear measures	13	13	–
House thermometers	2	2	–
Manometer	1	1	–
Sphygmomanometer	1	1	–
Totals	120	120	–

Laboratory activities also included remeasurement of 102,299 yards of sewing thread; screening 7 samples of anthracite coal to determine size; weighing 13 packages of food for manufacturers to determine proper quantity markings.

Field Work of Inspectors

The following shows a few of the activities of the inspectors in the field:—

Number of Inspections.—Stores, 576; gasoline pumps, 345; pedlers, 349; transient vendors, 292; net weight markings, 121; ice scales and price lists, 24; coal weight certificates, 79; total, 1,786.

Weighing and Measuring Devices.—Sealed, 4,284; unsealed, 2,391; total inspected, 6,675.

Clinical Thermometers.—Sealed, 2,259; unsealed, 42; total inspected, 2,301.

Reweighings

Commodity	Number	Correct	Under	Over
Coal (loads)	54	7	21	26
Packages of food, etc.	690	364	125	201
Totals	744	371	146	227

State Institutions

Article	Tested	Adjusted	Sealed	Condemned
Scales	125	9	117	8
Weights	360	60	360	–
Dynamometer	1	–	–	1
Gasoline pumps	1	1	1	–
Totals	487	70	478	9

Applications for certificates of fitness for appointment as measurers of leather were received from 41 persons. After examination, certificates were issued to 27 of these applicants while 14 failed to qualify.

Several complaints involving short weight or measure, and violations of the laws relating to hawkers' and pedlers' and transient vendors' licenses were received and investigated.

Prosecutions

There were 55 complaints entered and prosecuted in the courts by the inspectors of this division during the year. There were 41 convictions and fines amounting to $523 were imposed. Appeals are pending in 3 of these cases.

Under the provisions of section 14, chapter 101, General Laws, fines imposed for violations of the hawkers' and pedlers' license law are equally divided between the commonwealth and the town in which the offence occurred. The records of the state treasurer show receipt of $699 from this source during the fiscal year.

Following is a summary of prosecutions made by inspectors and disposition of the various cases:—

Prosecutions

Nature of Offense	Number of complaints	Convicted	Discharged	Pleaded nolo	Dismissed without finding	Filed	Fines imposed	Appealed
Peddling without license:—								
Bakery products	2	2	–	–	–	1	$3	–
Kindling wood	1	1	–	–	–	–	10	–
Meats	1	1	–	–	–	–	10	–
Strawberries	2	2	–	–	–	–	20	–
Peddling under another's license	1	1	–	–	–	–	10	–
Peddling under expired license	1	–	1	–	–	–	–	–
Not having license plates attached to vehicle	4	3	–	1	–	1	30	–
Furnishing goods to minor to peddle without license	1	–	–	1	–	–	10	–
Conducting transient business without license	22	17	1	1	3	6	160	1
Giving insufficient weight of coal	4	1	2	1	–	1	50	1
Fraud and deceit in sale of coal	1	–	1	–	–	–	–	–
Fraud and deceit in sale of coke	1	1	–	–	–	–	50	–
Giving insufficient weight of candy	1	1	–	–	–	–	15	–
Attempting to give short weight of bread	1	1	–	–	–	1	–	–
Giving insufficient measure of gasoline	5	3	–	2	–	1	50	–
Giving insufficient measure of ice cream	1	1	–	–	–	–	–	–
Giving insufficient measure of ginger ale	1	1	–	–	–	1	25	–
Using unsealed scale	1	1	–	–	–	–	10	–
Using unsealed odometer to determine cost of transportation	2	2	–	–	–	–	30	–
Using condemned scale	1	1	–	–	–	–	20	–
Possession of false scale	1	1	–	–	–	–	20	–
Totals	55	41	5	6	3	12	$523	2

Office Work

Under chapter 72, Acts of 1925, two gasoline pumps, three gasoline meters, twenty-eight gasoline metering systems, one truck-tank meter, two grease meters, seventeen grease-measuring devices, three lubricating-oil jars, seventeen liquid measures, and eight computing scales were approved by the director as to type and construction.

Under section 283, chapter 94, General Laws, three coin-operated personal weighing scales, one gum-vending device and one confectionery-vending-device were approved.

Under section 13, chapter 98, General Laws, five manufacturers were authorized to seal twenty additional types of clinical thermometers of their manufacture.

Under section 15, chapter 98, General Laws, one manufacturer was authorized to seal glass milk jars of his manufacture.

Under section 18, chapter 98, General Laws, one manufacturer was authorized to seal certain wholesale milk cans of his manufacture.

Under section 20, chapter 98, General Laws, three manufacturers were authorized to seal certain ice cream cans of their manufacture.

Under section 22, chapter 98, General Laws, paper or fibre cartons submitted by four manufacturers were approved for use as measures in the sale of certain specified commodities from bulk.

Under section 45, chapter 98, General Laws, prepared and promulgated rules and regulations governing the use of odometers in measuring mileage travelled by motor vehicles for the determination of rental or transportation charges. Neglect or refusal to comply with any of these rules and regulations is punishable by a fine of ten dollars.

As detailed in the financial statement concluding this report, a total of $138,086.39 was received from various sources, including fees for hawkers' and pedlers' and transient vendors' licenses, and for testing clinical thermometers. Cash to the amount of $2,000 was deposited and surety bonds amounting to $263,000 were filed with the director by applicants for transient vendors' licenses, to be subject to legal claims arising in connection with the transient business conducted under such license.

Licenses

Transient Vendors

The number of transient vendors licensed was 530 and the fees received from them amounted to $13,250. There were 22 persons prosecuted for conducting a transient business without license.

Hawkers and Pedlers

Although there was an increase of 495 in the number of hawkers' and pedlers' licenses for which fees were received during the year and a consequent increase in the amount of clerical work involved, the income to the commonwealth from this source showed a decrease of $4,454. The amounts paid over to cities and towns on account of special city and town licenses also showed decreases of $3,471 and $2,136, respectively, while the several counties received $9,056 more than was received by them in the preceding year. This anomalous condition was predicted in my annual report for 1929 and resulted from the amendment to the hawkers' and pedlers' license law, effective September 1, 1929, which permits an employee to peddle under a county license such articles as are manufactured by his employer, while before this amendment such persons were required to have either a state license or special city or town licenses for the municipalities in which they operated.

There were 426 special licenses issued to disabled veterans without payment of license fees, an increase of 100 over the preceding year.

Educational and Co-operative Activities

Those interested were kept informed as to legislation and other matters of interest through the bulletin and pamphlets listed under "Division Publications."

A portion of the space allotted to the department of labor and industries in connection with the Tercentenary Exposition of the commonwealth's departmental activities at the Eastern States Exposition at Springfield, September 14–20, and at the Commonwealth armory, Boston, September 29–October 11, was occuped by this division with a display of ancient and

modern standards of weight and measure, and numerous posters descriptive of the many divisional activities. Another feature attracting much attention at the armory was an exhibit, made possible through the co-operation of the Turner Tanning Machinery Corporation of Peabody and the United Shoe Machinery Corporation of Beverly, showing the gradual development of leather measuring devices. This exhibit included the old-fashioned hand-rack, the later hand-operated pin machine, and the latest power-driven pin-wheel machine which automatically indicates the number of square feet in each skin which passes through it and stamps this measurement upon the skin as it leaves the machine.

Several thousands of persons were in attendance each day, including teachers and pupils from various schools, who were each presented with booklets containing general tables of weights and measures and their equivalents, and a folder describing many instances in which Massachusetts led all other states in the enactment of progressive legislation relative to weights and measures.

The director attended the 23d National Conference on Weights and Measures held June 3 to 6, inclusive, at the United States bureau of standards, Washington, D. C. Weights and measures officials from all sections of the country were present and progress was made toward uniformity of methods employed in the administration of laws governing the use of weighing and measuring devices.

Inspector A. L. Jones, on July 15 to 17, inclusive, attended the annual convention of the New York State Association of Sealers of Weights and Measures as a delegate from the Massachusetts Association.

The director and all inspectors were in attendance at the annual convention of the Massachusetts Association of Sealers of Weights and Measures at Beverly, October 22 and 23. Sealers from all sections of the commonwealth were present and the weights and measures departments of several other states and the United States bureau of standards were represented. The proceedings were of unusual interest and the annual prize essays upon "The Value of a Sealer of Weights and Measures to a Community," submitted by pupils of the Beverly high school were excellent.

Local Sealers of Weights and Measures

Local sealers are required by law to file an annual report with the director between the first and tenth days of December in each year and the following is a summary of the work performed by them as indicated by these reports. No reports have been received from the sealers of Huntington, Middleton and Shutesbury and those of the sealers of Belchertown, Georgetown, Ludlow, Mashpee, Oak Bluffs, Oxford, Shelburne, Stow, Tisbury and Whately were received too late to be included in the following tabulation:

Summary of Local Sealers' Work

Article	Adjusted	Sealed	Non-sealed	Condemned
Scales				
Platform (over 5,000 lbs.)	567	2,750	70	183
Platform (100 to 5,000 lbs.)	5,052	23,503	687	718
Counter (100 lbs. or over)	182	1,510	39	42
Counter (under 100 lbs.)	2,281	18,033	383	392
Beam (100 lbs. or over)	130	1,962	78	89
Beam (under 100 lbs.)	63	763	9	10
Spring (100 lbs. or over)	217	5,506	32	420
Spring (under 100 lbs.)	4,055	29,078	223	1,220
Computing (100 lbs. or over)	109	642	8	41
Computing (under 100 lbs.)	4,413	24,258	230	1,013
Personal weighing (slot)	–	3,266	–	218
Prescription	140	1,574	34	46
Jewellers'	2	77	2	1
Totals	17,211	11,922	1,795	4,393

SUMMARY OF LOCAL SEALERS' WORK—*Concluded*

	Adjusted	Sealed	Non-sealed	Condemned
Weights				
Avoirdupois	5,483	143,986	1,417	646
Apothecary	303	19,652	–	343
Metric	121	7,926	741	37
Troy	47	1,680	37	2
Totals	5,954	173,244	2,195	1,028
Capacity Measures				
Vehicle tanks (compartments)	–	1,748	–	22
Liquid measures	213	61,620	373	595
Ice cream cans	–	1,382	–	17
Glass graduates	–	1,225	–	40
Oil jars	–	28,678	–	1,238
Milk jars	–	262	–	–
Dry measures	–	846	–	11
Fuel baskets	–	2,382	–	29
Totals	213	88,143	373	1,952
Automatic Measuring Devices				
Gasoline pumps	4,127	20,707	604	1,179
Gasoline meters	1,689	5,578	–	390
Kerosene pumps	176	3,111	113	109
Oil and grease measuring devices	2,269	11,665	5,198	165
Molasses pumps	220	2,723	85	4
Quantity stops (on measuring pumps)	11,970	88,206	–	–
Leather-measuring machines	–	286	–	9
Totals	20,451	132,276	6,000	1,856
Linear Measures				
Yard sticks	–	8,085	–	259
Tapes	–	359	–	3
Taximeters	1,982	3,175	–	123
Cloth-measuring devices	–	937	–	14
Totals	1,982	12,556	–	399
Grand totals	45,811	519,141	10,363	9,268

Sealing fees collected	$59,929.73
Adjusting charges	5,593.73
Total collected	$65,523.46

Reweighings and Remeasurements

COMMODITY	Number of Reweighings, etc.	Correct	Under	Over
Bread	28,481	20,576	2,988	4,917
Butter	18,565	14,857	1,961	1,747
Charcoal (in paper bags)	798	731	11	56
Coal (loads)	1,356	269	234	853
Coal (in paper bags)	10,867	6,986	957	2,924
Coke (in paper bags)	534	481	13	40
Confectionery	6,103	4,949	310	844
Dry Commodities (groceries, etc.)	32,539	27,434	2,531	2,574
Dry Goods	198	194	2	2

Reweighings and Remeasurements—Concluded

Commodity	Number of Reweighings, etc.	Correct	Under	Over
Flour	8,093	5,642	1,088	1,363
Fruit and vegetables	14,796	10,222	2,430	2,144
Grain and feed	908	746	59	103
Hay	180	91	71	18
Ice	1,029	584	116	329
Liquid commodities	4,549	4,059	205	285
Meats and provisions	14,210	11,016	731	2,463
Wood (cord)	319	300	11	8
Wood (kindling)	136	98	15	23
Wood (in paper bags)	2,137	2,030	29	78
Miscellaneous	300	199	87	14
Totals	146,098	111,464	13,849	20,785

The annual reports also show that various sealers measured 146 cords of wood; 1,500 gallons of gasoline and 44 loads of loam, and weighed 2,264 loads of coal; 129 loads of hay and grain and 1 load of drain pipe for municipal departments; inspected 4,182 clinical thermometers; 1,651 coal weighers' certificates; 1,754 ice scales; 486 junk scales; 2,793 pedlers' scales; 455 transient vendors; 5,294 pedlers' licenses; 35,755 markings of food packages; 11,281 weight statements on bread; 15,022 ice cream cans; 7,201 paper and fibre cartons; 9,080 milk jars; 3,970 wholesale milk cans and 5,046 miscellaneous items. They also tested 2,556 berry baskets; 96 climax baskets; 2,687 cartons; 5,648 milk jars; 307 standard boxes for farm produce; 106 U. S. standard barrels; 3,931 gasoline measuring devices (retests after sealing); and made 1,832 other miscellaneous tests.

Prosecutions by Sealers

Nature of Offence	Number of complaints	Convicted	Discharged	Pleaded nolo	Filed	Defaulted	Fines imposed	Continued
Giving insufficient weight of butter	5	5	–	–	2	–	$15	–
Giving insufficient weight of broken stone	1	1	–	–	–	–	10	–
Giving insufficient weight of coal	23	19	4	1	3	–	524	–
Giving insufficient weight of fowl	1	–	1	–	–	–	–	–
Giving insufficient weight of ham	2	2	–	–	–	–	35	–
Giving insufficient weight of ice	7	5	2	–	–	–	155	–
Giving insufficient weight of meat	2	2	–	–	1	–	10	–
Giving insufficient weight of pork	2	1	–	–	–	–	25	1
Giving insufficient weight of turkey	3	–	–	–	–	–	–	3
Giving insufficient weight (miscellaneous)	3	2	1	–	–	–	30	–
Giving insufficient measure of blueberries	1	1	–	–	–	–	–	1
Giving insufficient measure of gasoline	2	2	–	–	–	–	20	–
Giving insufficient measure of wood	3	2	1	–	–	–	50	–
Giving insufficient measure (miscellaneous)	1	1	–	–	1	–	–	–
Fraud and deceit in sale of coal	2	1	1	–	–	–	50	–
Failure to issue coal weight certificate	8	7	1	–	2	–	90	–
Selling coal without weighing	3	3	–	–	–	–	45	–
Selling coal in bags not properly marked	4	4	–	–	–	–	75	–
Failure to issue certificate in sale of cord wood	1	1	–	–	–	–	5	–
Failure to have scale on ice vehicle	1	1	–	–	1	–	–	–
Failure to post price list on ice vehicle	5	5	–	–	4	–	10	–
Failure to file price list of ice with sealer	1	1	–	–	–	–	10	–
Using false scale	10	10	–	–	1	–	170	–
Using condemned scale	1	1	–	–	–	–	50	–
Using unsealed scale	3	3	–	–	2	–	5	–
Interfering with deputy sealer	2	1	–	–	–	–	10	1
Peddling bakery products without license	1	1	–	–	–	–	3	–
Peddling coal without license	12	12	–	–	2	–	185	–
Peddling pictures without license	1	1	–	–	–	–	30	–
Peddling song sheets without license	1	1	–	–	1	–	–	–
Peddling miscellaneous goods without license	40	38	–	1	17	1	320	–
Peddling under expired license	1	1	–	–	–	–	10	–
Possession of another's license	1	1	–	–	–	–	5	–
Furnishing goods to minor to peddle without license	2	2	–	–	–	–	60	–
Employing minor to peddle without license	2	2	–	–	–	–	20	–
Permitting minor to peddle without license	2	2	–	–	1	–	25	–
Totals	160	142	11	2	38	1	$2,052	6

Financial Statement of the Division of Standards

Receipts

1,408 State (hawkers' and pedlers') license fees	$70,400.00
2,002 County (hawkers' and pedlers') license fees	18,070.00
922 City (hawkers' and pedlers') license fees	23,953.00
884 Town (hawkers, and pedlers') license fees	10,241.00
530 Transient vendors' license fees	13,250.00
1,203 Transfer fees	1,203.00
Total receipts from license fees	$137,117.00
Fees received for licenses not issued	125.50
Fees for testing clinical thermometers	288.56
Accumulation of badge account	250.00
Interest on deposits	305.83
Total receipts	$138,086.89

Payments

To State Treasurer:		
1,408 State license fees	$70,400.00	
2,002 County license fees	2,002.00	
922 City license fees	922.00	
884 Town license fees	884.00	
530 Transient vendors' license fees	13,250.00	
1,203 Transfers	1,203.00	
Fees received for licenses not issued	125.50	
Fees for testing clinical thermometers	288.56	
Accumulation of badge account	250.00	
Interest on deposits	305.83	
Total payments to state treasurer		$89,630.89
To county treasurers	$16,068.00	
To city treasurers	23,031.00	
To town treasurers	9,357.00	
Total paid and due to county, city and town treasurers		$48,456.00
Total payments		$138,086.89

Summary

Appropriation, personal services		$32,500.00	
Expended		31,946.24	
			$553.76
Appropriation, general expense		$15,000.00	
Commitment	$7,000.00		
Expended	6,891.31	13,891 31	$1,108.69
Unexpended balance			$1,662.45
Total income to the commonwealth from licenses, interest, fees for testing clinical thermometers, etc.			$89,630.89
Total expenditures and commitment			45,837.55
Excess of income over expenditures			$43,793.34

Retrospect

The activities of the division of standards, as such, date from December 1, 1919, and the following comparative figures will serve to show in some measure the progress made during the period ending November 30, 1930:—

	1919	*1930*	*Increase*
Number of inspectors employed	7	8	1
Number of clerical and laboratory employees	4	7	3
Motor vehicles owned	4	5	1
Paid for inspectors' salaries	$9,907.66	$19,530.00	$9,622.34
Paid for clerical and laboratory employees	$3,511.95	$8,336.24	$4,824.29
Number of hawkers' and pedlers' licenses issued	1,560	6,845	5,285
Number of transient vendors' licenses issued	31	530	499
Total expenditures	$25,778.54	$45,837.55	$20,059.01
Received from fees, etc., and paid to state treasurer	$30,590.00	$89,630.89	$59,040.89
Received from pedlers' license fees and paid to treasurers of counties, cities and towns	$10,578.00	$48,456.00	$37,878.00
Excess of income over expenditures	$4,812.36	$43,793.34	$38,980.98

REPORT OF THE DIVISION OF STATISTICS

Roswell F. Phelps, *Director*

Introductory

The principal branches of the work of the division of statistics are the collection and publication of statistics of labor and manufactures; the answering of inquiries having reference to the industries of the commonwealth, the rates of wages, hours of labor and employment conditions therein; and the immediate supervision of the four public employment offices maintained by the commonwealth. These several branches of the work are here discussed.

The statistical data herein presented relate, for the most part, to the calendar year, 1930, but summary data for certain prior years are also included for purposes of comparison. In a special report [1] issued by this department, the trend of employment in the principal industries in Massachusetts during recent years is discussed at some length, and in the appendix to that report there appear several tables of index numbers, showing, for the years 1925–1930, inclusive, the monthly trend of employment in the principal manufacturing industries and in the building construction industry, together with a series of illustrative charts, including, also, a chart showing graphically, the monthly fluctuations in the number of positions filled by each of the four state public employment offices during the same period of years. As the special report, above referred to, will form a part of the annual report of the department, the statistical tables and the charts already published in that report are not here reproduced.

During the year, the department of labor and industries, through the division of statistics, has continued to extend the scope of its monthly surveys relative to employment and earnings of wage-earners. These surveys now cover the principal manufacturing industries, building construction, wholesale and retail trade, and public utilities, but, in order that the entire field of employment may be covered, it is desirable that the scope of the monthly surveys be extended so as to include a greater representation of building

[1] "Report of an Investigation as to the Causes of Existing Unemployment and to Remedies Therefor," issued as House Bill No. 1298.

construction work and wholesale and retail trade, and that certain other fields of employment, such as agriculture, office employment, public service, telephone and telegraph service, domestic and personal service, employment in quarries and the fisheries also be included. If such extension of the work is to be undertaken, additional funds for the employment of a small number of statistical investigators and clerks and for contingent expenses will be required.

Recent Industrial Changes in Massachusetts

On those occasions, when the wheels of industry slow down and a portion of the wage-earning population is temporarily unemployed or employed on short time, with reduced earnings, it is the practice, all too prevalent, to contrast the then existing conditions with the more prosperous conditions which existed during a period of great industrial activity. Such comparison is apt to result in a depressed state of mind and even in a form of economic hysteria. At such times, it is well to take an account of stock, in order to determine whether or not, in the long range of industrial progress, conditions are actually as discouraging as they may appear.

Since 1920, the peak year of industrial activity in Massachusetts, there has been an almost continuous decline in three of the leading manufacturing industries in Massachusetts—the manufacture of cotton goods, woolen and worsted goods, and boots and shoes,—but such decline has, by no means, been confined to this state. Until 1930, curtailment of production in these important industries has been offset, in part, by substantial gains in other industries, such as the manufacture of electrical machinery, apparatus, and supplies; printing and publishing; rubber goods, including tires and tubes; dyeing and finishing textiles; bread and other bakery products; cutlery and edge tools; women's clothing; furniture; motor vehicles, bodies, and parts, and silk goods.

In Massachusetts, during the year 1930, as elsewhere throughout the United States, and, in fact, throughout the world, industrial depression has quite generally prevailed. Such depression, already evident in Massachusetts at the close of 1929, gained in intensity during the year 1930. According to pay-roll records of representative manufacturing establishments, furnished to this department in connection with its monthly surveys (discussed later in greater detail in this report) there was an almost continuous decrease from month to month in the number of wage-earners employed in the manufacturing industries, broken only by slight increases in the number employed in February, August, and September. At the close of the year, the number of employees in the manufacturing industries was less by 19.2 per cent than the number employed in December, 1929, and was less by 30.1 per cent than the average number employed during the three-year period, 1925 to 1927, considered as a normal base-period.

Forecasting can hardly be considered a proper function of the division of statistics, and the statistical data collected by the division (with the possible exception of the records, furnished by building department officials in cities and towns, relative to permits granted for the erection, alteration, and repair of buildings) furnish no definite basis for forecasting the industrial trends even during the immediate future. It is gratifying, however, to observe that the downward trends of employment in nearly all of the important manufacturing industries during the later months of the year, 1930, appear to have been less pronounced, and a rather marked increase in the total values represented by building permits granted in November and December, 1930, as compared with corresponding values for November and December, 1929, may quite properly be considered as an indication that there will be greater activity in the building industry in Massachusetts during the spring and summer months in 1931 than during the corresponding months in 1930, for the reason that it has been found in the past that a very considerable portion of the building construction work for which permits are granted is actually undertaken within a few months following the granting of the permits.

The erection of a large number of public buildings and the construction of many miles of public highways already proposed should add greatly to the building program for the year, 1931, and stimulate activity in other fields of employment, as a result of an increased demand for building materials, and expenditures for other goods, made possible through the distribution of the wage-fund thus made available in the building and highway construction industries.

Furthermore, the results of a special inquiry by this division, relative to stock for sale in the hands of manufacturers in November, 1930, as reported by a fairly large number of representative manufacturers, showed that the aggregate value of such stock on hand had been materially reduced since November, 1929. While the results of this tentative inquiry may not be considered as *conclusive*, there is, at least, some satisfaction to be found in the fact that there had been no further accumulation of manufactured products for which there was no market.

1. Statistics of Labor

The statistics of labor collected by the division are published as "Labor Bulletin," each constituting a "Part" of the "Annual Report on the Statistics of Labor." Numerous press notices, in mimeographed form, containing the results of regular monthly survey and special inquiries, are issued in order that information of current interest may become immediately available.

Annual Report on the Statistics of Labor (*Public Document No. 15*)

The report for the year 1930, when completed, will consist of three "Parts," as follows:

Part I. Twenty-ninth Annual Directory of Labor Organizations in Massachusetts, 1930 (Labor Bulletin No. 160). This directory contains, as in previous editions, the name, location, time, and place of meetings, and the name and address of the secretary and business agent of each labor organization having its headquarters in Massachusetts, together with a list of all the national and international labor organizations having one or more affiliated local unions in the United States, and the names and addresses of their respective secretaries, in so far as these data could be ascertained.

The number of organizations listed in this directory was 1,597, of which 135 were national and international organizations, 68 were state and district councils, 106 were central labor unions and councils, and 1,288 were local unions.

Part II. Time Rates of Wages and Hours of Labor in Massachusetts, 1930 (Labor Bulletin No. 161). This is the twenty-first of a series of annual reports of a similar nature, the first of which was issued by the former bureau of statistics in 1910. Nearly all of the information published in the earlier reports of this series was obtained from officials of labor organizations, and the reports for each of the years, 1913 to 1923, inclusive, were published under the title, "Union Scale of Wages and Hours of Labor in Massachusetts." From year to year the additional information obtained from employers has been included and, beginning with the report for 1924, the reports have been issued under the more appropriate title "Time Rates of Wages and Hours of Labor in Massachusetts."

The information obtained from officials of local trade unions relates to basic rates and hours of labor, the terms of which in most instances are definitely expressed in joint agreements between employers and employees. These data are presented by industries, trades, and occupations and by municipalities represented. As in former years, data with reference to union rates of wages and hours of labor in Boston, Fall River, Springfield, and Worcester were furnished to the United States bureau of labor statistics for publication in its annual report covering a large number of cities in the United States.

Additional information, obtained from official records of employers, has reference to rates of wages and hours of labor affecting employees in Massachusetts who are engaged in public service (federal, municipal, and metro-

politan district), transportation service (steam railroads, street and electric railways, railway express, and passenger bus), and telephone and telegraph service.

Part III. Statistics of Labor Organizations in Massachusetts, 1927–1930 (Labor Bulletin No. 162). In this report there will be presented, for purposes of permanent record, statistics having reference to the number and membership of labor organizations in existence in Massachusetts at the close of each of the four years specified. It has not seemed advisable to issue this report annually but this report will bring the data up to the close of the year 1930.

Monthly Surveys and Press Notices

Introductory. The department, through the division of statistics, conducts four monthly surveys which provide for the collection of employment and pay-roll data for the week including or ending nearest the 15th of each month from representative groups of employers, namely: manufacturing establishments, wholesale and retail trade establishments, three classes of public utilities, and building contractors. The questionnaires used are fundamentally the same, differing only in minor details. Efforts are made to secure representative returns so that artificial weighting need not be resorted to to obtain a "picture"of current conditions.

In addition to these four surveys of employment and earnings, a survey is made each month of building in prospect in Massachusetts, by securing at the close of each month from the building department officials in each of 55 municipalities, a transcript of their records of building permits applied for during the month just closed.

In all surveys the department co-operates with the United States bureau of labor statistics, and thereby avoids duplication in the work of collecting similar data by two separate agencies. The franking privilege is granted the department under these arrangements, and there is therefore no postage expense in connection with the surveys.

Employment and Earnings in Manufacturing Establishments. The collection of pay-roll data each month from representative manufacturing establishments was first undertaken in September, 1922, in order that there might be available current data indicative of the level and trend of employment and earnings. The so-called "standard plan," adopted by a large number of research agencies, is followed, and the questionnaire used is purposely quite simple in form in order that all inquiries may be answered readily on reference to current pay-roll records. Wherever possible, without undue clerical effort, employers segregate the pay-roll data by sex.

Approximately 1,100 manufacturing establishments, having a normal force of about 250,000 persons, are canvassed each month. The returns cover about 11 per cent of the total number of such establishments and nearly 45 per cent of the total number of wage-earners employed therein. Efforts are made to maintain a truly representative group of reporting establishments by industries, by municipalities, and industries within the principal municipalities, and by size of establishments. It is possible, by means of this monthly survey, to ascertain the trend of employment and earnings in the principal manufacturing industries and municipalities much in advance of the completion of the exhaustive annual census of manufactures.

The results of the survey are published in mimeographed form and the data are presented for the state as a whole, for each of the 38 leading industries and for each of the 25 leading industrial cities, and include the following particulars: number of establishments reporting; number of wage-earners normally employed; number actually employed and their earnings, as shown by the pay-roll for the middle week in the current month and the next preceding month; and the average weekly earnings for each of the two periods specified. The returns also show, with reference to operating time, the number of days per week and the number of hours per week considered as the normal operating schedule, and the corresponding days and hours the plant was actually in operation during the reporting periods.

Experience has proved most sound the policy of sending to each reporting agency, with the questionnaire for the current month, a mimeographed summary setting forth the results of the previous month's canvass. The press, and those on a large mailing list, are also furnished the mimeographed summary as issued.

The results of the monthly surveys cannot be presented fully in this report, but the series of index numbers in Table 1 is illustrative of the results obtained, and show, by months, the trend of employment in all manufacturing industries, and in seven leading industries during the years 1928, 1929, and 1930. These seven industries together represent close to 50 per cent of the total number of wage-earners usually employed in all manufacturing establishments in this commonwealth. The index numbers for the year 1928 were derived from the annual census data for that year (the latest year for which such data are available) while the index numbers for 1929 and 1930 were derived from data obtained by means of the monthly survey. When the census data for the year 1929 shall have become available, the index numbers for that year, based on the census data, will be substituted for those here presented, and the index numbers for the months in 1930 will be adjusted accordingly. This substitution of index numbers based on exhaustive returns, for those based on the monthly survey data, removes any bias for that particular year and makes the tentative figures for the ensuing years more nearly correct.

Table 1.—Index Numbers of Employment of Wage-earners in Representative Manufacturing Establishments in Massachusetts, All Industries, and Seven Leading Industries: By Months, 1928, 1929, and 1930*

(Revised Series—1930)

(Base:—Annual Census of Manufactures—Average for 1925–1927 equals 100.0)

Months	All Industries (100.0 = 590,616 Wage-earners)			Cotton Goods (100.0 = 92,841 Wage-earners)			Boots and Shoes (100.0 = 57,710 Wage-earners)			Woolen and Worsted Goods (100.0 = 53,526 Wage-earners)		
	1928	1929	1930	1928	1929	1930	1928	1929	1930	1928	1929	1930
January	93.4	92.5	85.9	81.6	79.3	69.5	91.0	91.2	82.2	87.5	84.5	69.2
February	94.3	94.0	86.1	85.7	80.4	70.4	99.1	97.2	86.5	85.8	84.2	69.8
March	94.6	94.5	85.0	85.2	81.7	68.5	102.1	95.7	91.1	85.2	83.5	68.0
April	91.1	93.4	83.4	73.2	81.4	67.2	95.2	92.0	87.9	80.8	81.9	65.9
May	88.8	93.2	81.3	60.7	81.5	63.6	91.0	88.7	83.1	82.6	85.2	69.8
June	87.8	91.3	78.5	58.3	80.3	58.6	87.4	77.1	70.3	81.3	82.9	73.2
July	86.3	91.0	74.3	55.3	77.6	50.6	92.0	84.7	76.8	76.0	80.8	70.9
August	89.1	91.9	75.7	57.2	76.6	50.4	101.7	89.3	85.6	80.9	83.0	71.7
September	92.0	94.3	76.2	56.6	76.2	49.9	105.7	95.2	83.5	84.4	84.9	72.7
October	95.0	94.0	75.4	71.6	75.1	52.0	104.9	92.6	75.7	89.1	83.8	66.9
November	95.3	89.9	73.2	78.3	75.1	52.2	95.7	81.2	66.1	92.4	76.1	63.8
December	93.4	86.5	69.9	78.9	71.9	50.8	87.2	69.8	53.9	88.1	72.4	57.4
Average	*91.6*	*92.2*	*78.7*	*70.2*	*78.1*	*58.6*	*96.1*	*87.9*	*78.6*	*84.5*	*81.9*	*68.3*

Months	Electrical Machinery, Apparatus, and Supplies (100.0 = 25,908 Wage-earners)			Foundry and Machine Shop Products (100.0 = 19,953 Wage-earners)			Printing and Publishing (100.0 = 14,442 Wage-earners)			Paper and Wood Pulp (100.0 = 13,839 Wage-earners)		
	1928	1929	1930	1928	1929	1930	1928	1929	1930	1928	1929	1930
January	91.3	106.5	89.7	96.6	100.7	104.8	100.3	101.7	107.5	91.1	89.2	94.0
February	90.1	106.5	85.2	96.9	102.4	106.1	100.7	103.2	105.7	91.3	92.9	93.9
March	88.8	106.1	80.2	97.5	105.8	104.9	101.4	103.2	104.5	91.3	93.8	93.7
April	87.3	106.7	78.8	97.8	106.0	103.7	101.5	103.1	104.5	91.2	94.4	90.7
May	88.0	107.0	79.0	98.6	108.6	103.5	101.7	102.8	104.1	91.0	94.2	91.6
June	91.8	106.5	80.3	99.2	107.3	102.8	101.2	104.2	102.6	91.0	93.7	90.7
July	93.1	106.2	75.8	99.5	106.8	98.1	98.9	102.7	101.0	90.4	92.6	83.0
August	96.6	110.9	72.7	98.9	108.1	97.8	98.5	101.7	100.6	91.3	93.4	85.1
September	101.5	111.4	75.5	99.9	110.6	98.7	100.7	105.8	101.7	90.7	92.8	84.6
October	106.4	110.9	77.5	101.4	112.7	96.2	102.4	108.8	102.1	91.3	94.3	86.2
November	107.1	101.5	75.4	101.8	112.0	93.3	103.2	108.7	102.1	90.5	93.3	83.1
December	105.7	92.8	74.3	101.8	110.1	92.4	103.8	109.8	101.4	91.9	93.8	83.4
Average	*95.7*	*106.1*	*78.7*	*99.2*	*107.6*	*100.2*	*101.3*	*104.6*	*103.2*	*91.1*	*93.2*	*88.3*

*Index numbers are available in mimeographed form for the twenty leading industries. Space does not permit of their inclusion in this report.

Referring first to the index numbers representing the trend of employment in all manufacturing industries combined, it will be observed that in all three years employment was much below normal, the average for the year 1928 being 91.6; for 1929, 92.2; and for 1930, 78.7. In eight of the 12 months in 1928, employment was over 90.0 but less than 96.0. The same was true in all but the last two months in 1929. During the year 1930 there was a continuous but not especially marked decrease in employment each month, from 86.1 in February to 74.3 in July. In the months of August and September, the usual seasonal recovery did not occur, and further declines were noted in the closing three months of that year, the index number for December reaching the low point, 69.9.

In the cotton goods industry, the prolonged strike of textile operatives which began in March, 1928, and ended in September, affected the entire industry, and employment for that year averaged only 70.2. In 1929 employment continued fairly uniform, but averaged only 78.1 for the year. In January and February, 1930 (69.5 and 70.4) there was slightly less employment than December, 1929 (71.9). Thereafter there was a continuous downward trend each month, the index decreasing to 49.9 in September and changing only a few points for the better thereafter. The average for the year 1930 was 58.6.

The boot and shoe industry was not far from normal in 1928, the average for that year being 96.1. At no time in 1929 did employment reach a normal level, although coming within a few points thereof during three months. The average for the year 1929 was 87.9. In each month in 1930 there were fewer employed than in the corresponding month in 1929. The average for the year 1930 was 78.6, and the low point was 53.9 in December.

The average of the index numbers of employment in the manufacture of woolen and worsted goods in 1928 was 84.5 and in 1929 it was 81.9. During the last two months of the year 1929 there was a decided decrease in employment, the December index number being 72.4. The decline in employment continued throughout 1930, except for slight improvement in June and September. The low point was 57.4 in December, 1930.

Each of the three major industries above discussed have been adversely affected for several years past. Any discussion of a return to more nearly normal operations in the manufacturing industries, as a group, must take into consideration these three major industries, which together normally employ nearly one-third of all those engaged in manufacturing in the state.

The trends of average weekly earnings were similar to those representing employment, but the fluctuations were not as marked. Few changes were made in the basic wage scales, and the weekly earnings of those who were employed on full time remained fairly constant in 1928 and 1929, but in 1930 large numbers were employed on part time, which resulted in a reduction in the average weekly earnings in some instances. For all manufacturing industries combined, the average weekly earnings were $24.64 in 1928, $25.01 in 1929, and $23.31 in 1930.

In the cotton goods industry the general average of the weekly earnings in 1928, 1929, and 1930, were, respectively, $18.69, $19.19, and $18.06. The highest averages were, respectively, $19.68, $19.89, and $18.89, and the lowest averages were $18.01, $18.32, and $17.22.

In the boot and shoe industry, because of its highly seasonal character which results in curtailed production at quite regular intervals, the variations in earnings from month to month were often marked. The general average of the weekly earnings in 1928 was $22.73, in 1929 it was $23.10, and in 1930 it was $20.35. The highest average in 1928 was $25.37, and the lowest $20.02, a difference of $5.35. The corresponding figures in 1929 were $25.92 and $19.18, a difference of $6.74. The corresponding averages in 1930 were $23.02 (slightly less than the general average for 1929) and $15.12, a difference of $7.90.

In the woolen and worsted goods industry the general averages in the respective years were $21.22, $21.92, and $20.30. The highest averages were,

respectively, $22.61, $22.38, and $21.25, and the lowest were, respectively, $20.25, $20.91, and $19.41.

The average weekly earnings in the other major industries showed rather similar fluctuations and relationships, the year 1929 being the year of greatest earnings, and the year 1930 the year of smallest earnings, during the three years under consideration.

Employment and Earnings of Building Tradesmen. Pay-roll and employment data for the week including or ending nearest the 15th of the month were first secured from buiding contractors in April, 1927, and each month since a representative list of such employers throughout Massachusetts has been canvassed. The information called for on the schedule may readily be taken from the pay-rolls, namely, the number of building tradesmen who actually worked that week, the total hours worked by all employed, and the amount paid them in wages therefor. The results of the canvass are made public each month immediately upon completion of the tabulations, and prior to forwarding the schedules for the month then current.

For December, 1930, returns were received from 357 building contractors who were then employing 8,079 building tradesmen, who worked 293,227 man-hours, for which they were paid $308,738 in wages. The hours worked per week per man averaged 36.3, and the weekly earnings averaged $38.21, or $1.05 per hour. The department has compiled a rather exhaustive list of contractors in Massachusetts, and every effort will be made to secure a large number of additional returns in 1931, and in such case it may be possible to tabulate the data by classes of contractors, thus making the survey of greater value than at present.

Series of index numbers have been computed by the "chain-relative" method, showing the trends of employment, man-hours, earnings, and other factors, and these index numbers are given in the accompanying table for each of the months in 1929 and 1930. The index numbers for prior months appear in a similar report issued one year ago.

*Table 2.—Index Numbers of Employment and Earnings of Building Tradesmen in Massachusetts as Reported by Building Contractors.**

(Average for Year 1928–100)

Months	Number of Tradesmen	Number of Man-hours	Amount Paid in Wages	Average Weekly Hours per Man	Average Weekly Earnings Per Man	Average Hourly Earnings per Man
1929						
January	70.2	64.0	64.6	91.2	92.0	100.9
February	74.5	71.3	70.7	95.7	94.9	99.2
March	73.7	71.2	71.4	96.6	96.9	100.3
April	89.0	80.0	82.3	89.9	92.5	102.9
May	95.8	97.8	100.6	102.1	105.0	102.9
June	111.7	114.1	118.8	102.1	106.4	104.1
July	119.4	122.4	124.0	102.5	103.9	101.3
August	127.2	134.0	138.8	105.3	109.1	103.6
September	124.4	129.0	134.4	103.7	108.0	104.2
October	121.5	123.2	127.0	101.4	104.5	103.1
November	120.3	116.2	119.9	96.6	99.7	103.2
December	108.6	105.9	111.3	97.5	102.5	105.1
Average	*103.0*	*102.4*	*105.3*	*98.7*	*101.3*	*102.6*
1930						
January	93.3	89.9	96.2	96.4	103.1	107.0
February	85.7	82.5	89.0	96.3	103.9	107.9
March	89.3	90.4	95.3	101.2	106.7	105.4
April	93.2	94.7	99.4	101.6	106.7	105.0
May	91.8	92.9	95.7	101.2	104.2	103.0
June	103.5	105.5	109.2	102.0	105.5	103.5
July	105.6	105.0	109.1	99.4	103.3	103.9
August	100.0	99.6	103.8	99.6	103.8	104.3
September	97.4	98.5	101.9	101.1	104.6	103.5
October	95.3	86.9	90.5	91.2	95.0	104.1
November	94.3	85.2	90.0	90.3	95.4	105.6
December	85.3	80.7	86.3	94.6	101.2	106.9
Average	*94.6*	*92.7*	*97.2*	*97.9*	*102.8*	*105.0*

*This survey was first undertaken in April, 1927.

A comparison of the index numbers representing the number of building tradesmen employed, man-hours worked, and the amount paid in wages, shows that conditions in the building industry in 1930 differed somewhat from those in 1929. Employment during the year 1930 was moderately good during what are usually the least active months, but the usual seasonal improvement was not evident during the spring and summer months. In 1929, employment during the first three months of the year was at a low point, but unusual activity during the summer and fall brought the average for the year 1929 to slightly above the respective averages for the year 1928, taken as the base year. The average of the index numbers of employment in 1930 was 94.6; for man-hours, 92.7; and for the amount paid in wages, 97.2. The corresponding averages for 1929 were 103.0, 102.4, and 105.3.

There was little difference in the records of the two years with respect to average hours worked each week, the average weekly earnings per man, and the average hourly earnings per man. The weekly and hourly earnings were, however, slightly greater in 1930 than in 1929.

Employment and Earnings in Public Utility Companies. The monthly survey of three classes of public utilities was begun in January, 1929, with reports from 34 companies. During that year the number was increased to 84, which included 15 street and electric railway companies, six steam railroads, and 63 gas and electric companies, engaged in the production and distribution of gas and electricity. All employees, both manual and clerical (except salaried executives) on the pay-roll of these companies in Massachusetts are included in the reports. It is estimated that the companies reporting employ approximately 95 per cent of the total number of persons actually on the pay-rolls of all utility companies in Massachusetts coming within the three classifications.

The numbers employed by the 84 public utility companies under discussion showed relatively little monthly fluctuation. The most marked increases occurred in the spring; the number employed in April (56,414) showed a gain of 1,458 persons when compared with March, and the number employed in May (57,683) showed a further gain of 1,269. During June very nearly as many (57,362) were employed as in May. There was a gradual recession in employment in each of the months July, August, and September; while October showed little change from September, the number employed in the two latter months being 54,651 and 54,683. The number employed in November was less, however, by 1,348 than in October, and in December there was a further decrease of 1,267 persons. The December figure (52,036) showed a variation from the peak in May (57,683) of 5,647 persons employed. The average number employed during the twelve months in 1930 was 55,307, and the peak employment was therefore only 2,376 persons, or 4.3 per cent, greater than the average employment for the year.

The number employed by the 15 street railway companies showed relatively few important changes between months. The greatest variation in employment (a difference of 518 persons) occurred between November and December, these months showing, respectively, the greatest number (12,567) and the least number (12,049) employed at any time during the year. During five other months the number employed was over 12,500, but less than the peak. The average for the year was 12,415.

Three of the six steam railroad companies reporting each month operate interstate, but they furnish the department with a special tabulation of employment and pay-roll data relating only to Massachusetts. Quite marked changes occurred between months on the railroads, as many additional men are hired as soon as it is possible to carry on outdoor track and construction work, and employees are released as the various projects are completed. The number employed in January, 1930, was 29,311. Somewhat fewer were employed in February and March, but in April the returns showed 1,222 employees more than in March. Over 30,000 were employed in April, May, and June, the peak being 30,838 in May. The low point was 26,281 employed in December, and the average for the year was 28,887.

Table 3.—Employment and Earnings of Wage-earners in 84 Public Utility Companies in Massachusetts; for One Week in Each of the Months in 1930.

Months—1930	Number of Persons Employed	Aggregate Weekly Pay-rolls	Average Weekly Earnings	Number of Persons Employed	Aggregate Weekly Pay-rolls	Average Weekly Earnings
	Totals—84 Public Utility Companies			*15 Street and Electric Railway Companies*		
January	55,526	$1,873,528	$33.74	12,539	$474,749	$37.86
February	54,816	1,865,395	34.03	12,541	468,673	37.37
March	54,956	1,833,993	33.37	12,449	465,985	37.43
April	56,414	1,862,262	33.01	12,354	464,085	37.57
May	57,683	1,889,063	32.75	12,502	464,608	37.16
June	57,362	1,846,126	32.18	12,537	460,316	36.72
July	56,579	1,837,609	32.48	12,432	469,552	37.77
August	55,676	1,812,497	32.55	12,139	453,973	37.40
September	54,683	1,789,777	32.73	12,355	453,809	36.73
October	54,651	1,763,203	32.26	12,521	462,729	36.96
November	53,303	1,731,038	32.48	12,567	456,841	36.35
December	52,036	1,690,388	32.48	12,049	446,400	37.05
Yearly average	*55,307*	*$1,816,240*	*$32.84*	*12,415*	*$461,810*	*$37.20*
	6 Steam Railroad Companies			*63 Gas and Electric Companies*		
January	29,311	$952,906	$32.51	13,676	$445,873	$32.60
February	28,694	957,362	33.36	13,581	439,360	32.35
March	28,793	929,172	32.27	13,714	438,836	32.00
April	30,015	949,239	31.63	14,045	448,938	31.96
May	30,838	964,926	31.29	14,343	459,529	32.04
June	30,474	922,680	30.28	14,351	463,130	32.27
July	29,702	900,452	30.32	14,445	467,605	32.37
August	29,247	892,259	30.51	14,290	466,265	32.63
September	28,289	875,739	30.96	14,039	460,229	32.78
October	28,103	852,088	30.32	14,027	448,386	31.97
November	26,901	836,744	31.10	13,835	437,453	31.62
December	26,281	802,475	30.53	13,706	441,513	32.21
Yearly average	*28,887*	*$903,004*	*$31.26*	*14,004*	*$451,426*	*$32.23*

The trend of employment from month to month by the gas and electric companies was not marked. The number employed in January in the 63 companies reporting was 13,676. The number reported in February was 13,581, the low point for the year. There were gradual increases thereafter, over 14,000 being employed in each of the months, April through October. The peak of employment was 14,445 in July. Employment decreased in November and again in December, the number reported in the latter month being 13,706, or nearly the same as in March. The average number employed during the year was 14,004.

In general, the aggregate pay-rolls increased or decreased as did employment, although not always in the same degree. Because of the close correspondence between the trends of employment and aggregate pay-rolls, a detailed discussion of the pay-roll data hardly seems necessary. Average weekly earnings per person employed showed relatively little change, either from month to month or during the period of a year. Wage scales have not been materially adjusted, and the differences in the per capita earnings were due largely to changes in the nature of the work being performed and the extent of full and part time worked.

Employment and Earnings in Wholesale and Retail Trade Establishments.

In November, 1929, the division began the monthly collection of employment and pay-roll data from wholesale and retail trade establishments in Massachusetts. A large number of reports was secured almost at once and no effort was made until November, 1930, to materially increase the representation. At that time an additional number of such establishments was canvassed and returns were received from over 200 companies who had not

previously been reporting, which companies operate 300 stores or branches and employ nearly 9,000 persons. In Table 4 are presented the data for November and December, 1930, and from these it will readily be seen the extent of the coverage in each instance, and the amount of wage payments.

The November-December, 1930, comparisons included 560 reports covering 2,501 stores or branches in Massachusetts, employing 43,835 persons in November and 48,390 in December. The corresponding pay-rolls were $1,108,700 and $1,164,496. It is estimated that the representation based on the total number employed in wholesale and retail trade for whom reports would be available is now one of approximately 35 per cent. Sufficient returns are now received from seven classes of trade outlets to permit tabulations to be made of employment and pay-roll data for each class. No computations of average weekly earnings are made as the pay-roll data include such varied groups of employees, many of whom are extra sales people employed for only a limited number of hours each week, that a general average would be of little significance.

Table 4.—Employment and Earnings of Wage-earners in Representative Wholesale and Retail Trade Establishments, for One Week in November and December, 1930

Trade Establishments Grouped by Classes of Goods Sold	Number of		Number of Persons Employed		Aggregate Weekly Pay-rolls	
	Reports Received	Stores or Branches Covered	November 1930	December 1930	November 1930	December 1930
Automobiles, accessories, gas and oil	37	67	1,361	1,331	$44,066	$43,664
Candy, soda, drugs, and food	41	98	2,674	2,694	48,522	48,820
Department and dry goods stores	72	133	12,104	15,370	238,280	279,030
Fuel and Ice	45	75	2,210	2,370	60,665	66,831
Furniture and radios	33	55	1,069	1,063	30,936	30,558
Groceries, provisions, meats, and fish	120	1,750	12,066	12,161	350,303	350,231
Wearing apparel and accessories	113	156	9,083	10,233	235,038	246,322
All other classes of goods	99	167	3,268	3,168	100,890	99,040
Total—all classes	560	2,501	43,835	48,390	$1,108,700	$1,164,496

As the lists of reporting establishments change from month to month, the index numbers of employment and of pay-rolls have been computed by the "chain-relative" method for all trade establishments combined and for each of three leading groups, beginning with the returns for November, 1929 (see Table 5). The month of January, 1930, was chosen as the base, or 100.0.

The index numbers of employment for all trade establishments reporting showed very little change from month to month in 1930, except in December, but seasonal tendencies are disclosed. Employment in February showed a decrease of 97.0 from 100.0 in January, but thereafter there were slight increases for a short period, the index number for June being 101.4. There were decreases in July to 98.3 and in August to 95.1, followed by gradual improvement. The index number for November was 101.0, and in December there was a marked increase in connection with the holiday trade, the index number for that month being 111.5. The only data available for 1929 were for the months of November and December, and it will be observed that the respective index numbers (114.5 and 127.2) showed much greater employment at that time than during the latter part of 1930.

Two of the three leading groups of establishments are closely related, namely, department and dry goods stores, and those selling wearing apparel and accessories. The former group includes many stores which to some extent sell wearing apparel. Employment in department and dry goods stores did not show quite as marked fluctuations or seasonal tendencies as

Table 5—Index Numbers of Employment and Earnings of Wage-earners in Representative Wholesale and Retail Trade Establishments, for One Week in Each Month, November, 1929–December, 1930

Months, 1929–1930	Number of Persons Employed				Aggregate Weekly Pay-rolls			
	All Establishments Reporting	Department and Dry Goods Stores	Wearing Apparel and Accessories	Groceries, Provisions Meats and Fish	All Establishments Reporting	Department and Dry Goods Stores	Wearing Apparel and Accessories	Groceries, Provisions Meats and Fish
1929								
November	114.5	117.6	115.4	108.8	106.4	106.9	112.2	102.6
December	127.2	152.0	128.5	105.0	112.9	126.7	114.2	103.6
1930								
January	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
February	97.0	95.5	93.0	101.7	97.7	91.8	94.8	103.8
March	97.4	95.2	94.2	102.9	96.7	91.5	96.0	102.5
April	99.3	98.7	98.9	101.8	98.1	93.6	100.4	102.2
May	100.6	103.5	98.1	99.9	99.8	95.8	102.5	102.8
June	101.4	101.8	99.1	104.8	102.1	96.4	103.3	109.8
July	98.3	98.3	91.7	105.4	100.0	93.8	97.7	109.3
August	95.1	95.4	88.9	100.3	97.2	92.0	95.6	104.9
September	96.6	94.9	93.3	101.4	97.8	89.9	97.7	106.2
October	98.0	97.9	95.3	99.3	98.1	91.2	99.8	103.3
November	101.0	100.4	100.8	101.4	100.3	94.8	101.7	105.4
December	111.5	127.5	113.6	102.2	105.3	111.0	106.6	105.4

did employment in the wearing apparel stores. Considering January, 1930, as 100.0, employment in the department and dry goods stores decreased to 95.5 in February and to 95.2 in March. An improvement was noted in both April and May. The index for the latter month was 103.5, the highest point reached during the year, except in December. Employment in June was slightly less than in May, and in the following three months it decreased somewhat more, the index number for September being 94.9. There was some improvement in October and November, and a very marked increase from 100.4 in November to 127.5 in December. The corresponding index numbers for November and December, 1929, were 117.6 and 152.0.

The number employed in the wearing apparel and accessories stores decreased from 100.0 in January to 93.0 in February, showed a slight increase in March and a more decided increase in April to 98.9. Employment in May and June continued at about that same level, but in July there was a marked decrease to 91.7, and in August a further decrease to 88.9, the low point for the year. In September an excellent gain was noted; in October a still further, but slight, gain; and in November the index reached 100.8. The effects of the holiday season are shown by an increase in the index number to 113.6 in December. The index numbers for November and December, 1929, were respectively, 115.4 and 128.5.

Employment in the grocery, provision, meat and fish stores remained fairly constant during the year 1930. Employment in March was slightly greater than in January and February, with an offsetting decline in April and May. In June the index was 104.8 and in July 105.4, the highest point recorded during the year. During the remaining months of the year, index numbers did not vary appreciably from 100.0.

Quite generally pay-rolls showed very nearly the same monthly trends as did employment, but the changes were not as marked. For all trade establishments combined, considering January, 1930, as 100.0, the low point in earnings is represented by the index number 96.7 in March, and the highest points by 102.1 in June and 105.3 in December. It should be noted that while employment increased 10.4 per cent in December as compared with November, wage payments increased only 5.0 per cent, indicating that many of those hired especially for the holiday season did not receive the equivalent of the usual weekly wages paid permanent employees. This latter condition applied especially to the department and dry goods stores and to those selling wearing apparel and accessories.

The data with reference to the other trade groups are not discussed in detail as the returns previous to November, when many additional companies reported, have not been sufficiently large to warrant such a discussion.

Building Statistics. Statistics of building permits were first collected from 36 cities, beginning in 1919, on a quarterly basis. The original inquiries called merely for a segregation of new building from additions, alterations, and repairs. In 1923 the present detailed form of schedule was adopted, and monthly reports were received from each of 37 cities in Massachusetts for that year, and beginning in January, 1924, from each of the 39 cities. During the past four years the building department officials in 16 of the larger towns have also furnished similar information with reference to building permits applied for in their respective municipalities. [1] The survey now

39 Cities

Attleboro	Fall River	Lowell	Newton	Somerville
Beverly	Fitchburg	Lynn	North Adams	Springfield
Boston	Gardner	Malden	Northampton	Taunton
Brockton	Gloucester	Marlborough	Peabody	Waltham
Cambridge	Haverhill	Medford	Pittsfield	Westfield
Chelsea	Holyoke	Melrose	Quincy	Woburn
Chicopee	Lawrence	New Bedford	Revere	Worcester
Everett	Leominster	Newburyport	Salem	

16 Towns

Arlington	Brookline	Milton	Plymouth	Wellesley
Belmont	Dedham	Needham	Saugus	West Springfield
Braintree	Framingham	Norwood	Watertown	Winchester
				Winthrop

covers all cities and 16 of the larger towns in which there is any considerable amount of building done during the year. In a majority of the towns not canvassed there are no adequate records of building activities.

The questionnaire used calls for the number of applications filed for permits to build, the value represented thereby, classified by type of structure, and their intended use, and the number of family accommodations to be provided, classified by the nature of residential building proposed. Mimeographed summaries of the completed returns are issued each month immediately following the month for which the statistics are furnished.

The estimated cost of prospective building in the 55 municipalities for each of the four years 1927–1930, inclusive, are presented in Table 6. These data show that during the year 1930 there was much less building than during any of the three prior years, more particularly in new residential building. In each of the three years prior to 1930 the amount of new residential building exceeded the amount of new non-residential building, usually by quite a large amount; but in 1930 the residential building was less than the value of new non-residential building. The values represented by the latter class have not changed materially during the past four years, except in 1930.

Table 6—Estimated Cost of Prospective Building in 55 Municipalities in Massachusetts, for the Years 1927–1930, inclusive: By Classes of Projects

Years	New Residential Building	New Non-residential Building	Additions, Alterations, and Repairs	Totals—All Classes of Projects
1930	$40,146,313	$45,173,157	$22,033,838	$107,353,308
1929	69,936,017	53,945,280	29,774,203	153,655,500
1928	96,878,609	52,047,563	22,122,372	171,048,544
1927	101,959,226	51,765,595	27,574,615	181,299,436

The principal data for the years 1929 and 1930 for the 39 cities and 16 towns, and for these 55 municipalities combined, are presented in Table 7. The data in detail for the individual cities and towns are to be published in a special mimeographed report, and are therefore not presented herein.

[1] A list of the 55 cities and towns covered by this monthly survey follows:

In the 55 municipalities combined, applications were filed in 1930 for permits to erect, add to, or repair 30,963 buildings, and the estimated cost of the work to be undertaken was $107,353,308. The corresponding data for the 39 cities were 26,231 permits and an estimated cost of $87,752,926; and for the 16 towns, 4,732 permits and an estimated cost of $19,600,382. In each group the number of permits and estimated cost were much less than in 1929. For the 55 municipalities combined there were decreases of 15.0 per cent in the number of permits, and 30.1 per cent in the estimated cost. For the cities as a group, there were decreases of 14.4 per cent in the number of permits and 31.9 per cent in the estimated cost; and for the towns there were decreases of 17.9 per cent in the number of permits and 20.9 per cent in the estimated cost.

The proposed expenditure of $107,353,308 represented the following classes of construction: new residential building, $40,146,313, or 37.4 per cent; new non-residential building, $45,173,157, or 42.1 per cent; and additions, alterations, and repairs, $22,033,838, or 20.5 per cent. Of the total represented by permits in the 39 cities the value of new residential building constituted 32.4 per cent; new non-residential building, 45.1 per cent; and additions, alterations, and repairs, 22.5 per cent; whereas in the 16 towns the respective percentages were 59.7, 28.6, and 11.7. It is very evident from these data that the decline in building was to a large extent due to there being much less demand for residential building, more particularly in the cities.

Table 7—Summary of Prospective Building in 55 Municipalities in Massachusetts, for the Years 1930 and 1929: By City and Town Groups, and by Classes of Projects

Number and Cost, and Years	New Residential Building	New Non-residential Building	Additions, Alterations, and Repairs	Totals—All Classes of Projects
39 Cities				
Number of buildings:				
1930	3,516	7,852	14,863	26,231
1929	4,919	9,766	15,955	30,640
Estimated Cost:				
1930	$28,446,513	$39,559,032	$19,747,381	$87,752,926
1929	53,817,512	48,186,143	26,887,962	128,891,617
16 Towns				
Number of buildings:				
1930	1,415	1,763	1,554	4,732
1929	1,840	2,273	1,652	5,765
Estimated Cost:				
1930	$11,699,800	$5,614,125	$2,286,457	$19,600,382
1929	16,118,505	5,759,137	2,886,241	24,763,883
55 Municipalities				
Number of buildings:				
1930	4,931	9,615	16,417	30,963
1929	6,759	12,039	17,607	36,405
Estimated Cost:				
1930	$40,146,313	$45,173,157	$22,033,838	$107,353,308
1929	69,936,017	53,945,280	29,774,203	153,655,500

In the 55 municipalities canvassed, 4,087, or 82.9 per cent, of the 4,931 dwellings planned were of the one-family type. The next largest group comprised 686 two-family dwellings, or 13.9 per cent of the total number. Of the total estimated cost of new residential building ($40,146,313), $26,294,373, or 65.5 per cent represented one-family houses; $5,360,140, or 13.4 per cent, represented two-family houses; and $5,076,200, or 12.7 per cent, non-housekeeping dwellings (bachelor apartments, dormitories, lodging houses, etc.)

Table 8—Summary of Prospective Building in 55 Municipalities in Massachusetts During the Year 1930: By Classes of Structures

1—New Residential Buildings

Classes of Structures	Number of Buildings	Estimated Cost	Number of Family Accommodations
Housekeeping dwellings:			
One-family dwellings	4,087	$26,294,373	4,087
Two-family dwellings	686	5,360,140	1,372
One-family and two-family dwellings with stores or shops therewith	20	134,500	22
Multi-family dwellings (three or more families)	117	3,211,100	814
Multi-family dwellings with stores or shops therewith	4	70,000	18
Non-housekeeping dwellings:			
Bachelor apartments, dormitories, club and association buildings with bedrooms	15	5,005,200	–
Hotels	–	–	–
Lodging houses and other non-housekeeping dwellings	2	71,000	–
Total—New residential buildings	*4,931*	*$40,146,313*	*6,313*

2—New Non-Residential Buildings, and Additions, Alterations, and Repairs

Classes of Structures	Number of Buildings	Estimated Cost	Rank on Basis of Cost
New non-residential buildings:			
Amusement and recreation places (including club buildings without bedrooms)	114	$1,440,475	8
Churches, chapels, and parish houses	18	767,500	12
Factories, bakeries, ice-plants, greenhouses, laundries, and other workshops	183	3,130,225	4
Garages, public	165	642,255	14
Garages, private	6,748	3,114,716	5
Gasoline and service stations	334	1,382,850	9
Institutional buildings	49	10,746,767	1
Office buildings, including banks	75	5,985,255	3
Public buildings, including libraries and museums	21	2,443,750	7
Public works and utilities	28	1,154,390	10
Schools, grade and high (public and private)	41	9,630,299	2
Sheds, poultry houses, and other minor out-buildings	1,314	741,618	13
Storage warehouses, coal pockets, lumber sheds, etc.	137	807,697	11
Stores, restaurants, and other mercantile buildings	294	3,038,244	6
All other non-residential buildings	94	147,116	–
Total—New non-residential buildings	*9,615*	*$45,173,157*	–
Additions, alterations, and repairs	*16,417*	*$22,033,838*	–

Of the 6,313 family accommodations provided, the 4,087 one-family houses provided the largest number, or 64.7 per cent of the total, followed by two-family dwellings with 1,372 accommodations (21.8 per cent); and multi-family dwellings with 814 accommodations (12.9 per cent). This is in marked contrast with the relative percentages shown by the returns for the year 1929, the respective percentages for that year being 43.6, 17.7, and 38.4. It is evident from these data that the decreased residential building has to a large extent been due to the marked decrease in the number of multi-family dwellings being constructed (332 such dwellings in 1929 with accommodations for 4,687 families, or an average of 14 per apartment house, and 117 in 1930 with 814 accommodations, or an average of seven per apartment house).

The total number of new non-residential buildings planned in the 55 municipalities in 1930 was 9,615, estimated to cost $45,173,157. On the basis of cost, 49 institutional buildings represented the largest class, with an estimated cost of $10,746,767 (23.8 per cent of the total); the second largest group was 41 grade and high schools with an estimated cost of $9,630,299 (21.3 per cent); and the third largest group was 75 office and bank buildings with an estimated cost of $5,985,255 (13.3 per cent). On the basis of the number of buildings, the 6,748 private garages lead all other groups and constituted 70.2 per cent of the total number of non-residential buildings planned.

The estimated cost of additions, alterations, and repairs in 1930, represented by 16,417 permits granted, amounted to $22,033,838, showing a decided decrease when compared with the year 1929, but very nearly the same as during the year 1928.

The reference library, which is intended primarily to serve the personnel of the department, is used extensively by the general public.

As a result of the addition to the department of the industrial commission and the division on the necessaries of life, the work of the reference library has increased considerably during the past year. Two employees devote full time to this work, and it has been necessary to employ temporary assistants from time to time.

During the present depression, there has been a marked increase in the number of requests for information relative to industrial questions. The following subjects were found to be of special interest: unemployment, unemployment insurance, conditions in the cotton and woolen industry, married women in industry, employment age limits, child labor, employee stock purchase plans, commodity prices, health of employees in various trades, injurious effects of paint spraying, mergers in industry, state publicity, effect of machinery on employment, and surveys of small towns in Massachusetts.

The library, with its large amount of reference material, both current and historical, is of special service whenever an investigation is made by the department, because there is immediately available the literature on the subject of the inquiry.

The news clipping service maintained by the library has proved to be of value to members of the department in keeping them in touch with conditions in this and other states.

The library now consists of 3,500 bound volumes, 11,500 pamphlets, 24 quarterlies, 180 monthlies, 14 bi-weeklies, 33 weeklies, 15 daily newspapers, and numerous mimeographed government reports. The pamphlets, periodicals and newspapers are read, clipped and the material of interest is distributed to members of the department or filed for future reference.

2. Statistics of Manufactures

The census of manufactures in Massachusetts for the year, 1929, was taken during the past year in co-operation with the United States Bureau of the Census, thereby avoiding duplication of a considerable amount of field and office work and effecting a saving to this department of over $4,000 on account of salaries, postage, printing, and the traveling expenses of temporary investigators in the field.

This census in Massachusetts was under the immediate supervision of the director of statistics who was appointed as supervisor by the federal bureau. The schedules furnished by the census bureau were used jointly, and the franking privilege was granted in connection with this work. The original schedules returned by the manufacturers were forwarded to the federal bureau after copies were made for the records of this department.

The tabulation of the returns by industries for the state as a whole are being made at Washington, and the results are not yet available for publication. In order to make public as soon as possible the data for municipalities and the principal industries therein, preliminary tabulations have been made by the division of statistics, and the results are being issued in the form of press notices.[1]

Summary of Principal Data, 1913 to 1929. In order to show the general industrial trend in Massachusetts for a series of years, the principal data for all manufacturing industries, combined, for the years 1913 to 1929, inclusive, are presented in Table 9. In making comparisons for the several years of

[1]This series of press notices is being issued under the title "Manufactures Press Notices, 1930," and will include the following:
Nos. 1–39. *Individual Cities.* A separate press notice for each of the 39 cities containing data, by principal industries, for 1929 with comparable data for specified industries for certain prior years.
No. 40. *Summary by Cities.* Totals only for each city, 1929.
No. 41. *General Summary for the State.* Principal data by years, 1913–1929.
No. 42. *Summary by Towns.* Totals only for each town, 1929.
No. 43. *Metropolitan Boston.* Principal data by municipalities, 1929.
No. 44. *Summary by Industries.* Principal data for leading industries, 1929, with comparable data for the years 1920–1929.

the money values shown in this table, due allowance should be made for price fluctuations and the changes in the purchasing power of the dollar from year to year. The *values* of products manufactured do not necessarily represent the relative *volume* of goods produced during the several years.

Table 9—Principal Data Relative to Manufacturing in Massachusetts, All Industries Combined, 1913–1929, inclusive

Years	Number of Establishments	Capital Invested	Value of Stock and Materials Used	Amount of Wages Paid during the Year	Average Number of Wage-earners Employed	Value of Products	Value added by Manufacture
1913	8,405	$1,345,461,875	$961,778,476	$351,299,706	616,927	$1,658,728,363	$696,949,887
1914	12,013[1]	1,548,960,733	931,383,793	341,309,517	606,698	1,641,373,047	709,989,254
1915	9,707	1,550,080,995	959,662,457	346,243,472	596,348	1,692,445,366	732,782,909
1916	9,829	1,791,050,092	1,354,433,202	447,957,731	682,621	2,349,933,003	995,499,801
1917	9,865	2,239,848,630	1,782,440,354	537,144,629	708,421	3,020,557,545	1,238,117,191
1918	9,695	2,510,730,295	2,249,822,722	679,401,273	719,210	3,851,346,215	1,601,523,493
1919	11,906[1]	2,962,108,527	2,260,713,036	766,623,337	713,836	4,011,181,532	1,750,468,496
1920	10,262	2,987,620,867	2,489,237,446	891,176,822	695,832	4,370,276,822	1,881,039,376
1921	9,994[1]	[2]	1,441,035,230	641,360,936	579,071	2,849,413,516	1,408,378,286
1922	10,056	2,822,014,756	1,512,510,105	678,073,968	612,682	3,002,625,958	1,490,115,853
1923	10,519[1]	[2]	1,835,218,349	799,363,111	667,443	3,570,543,265	1,735,324,916
1924	10,174	2,853,590,206	1,629,342,134	711,812,104	589,364	3,126,137,145	1,496,795,011
1925	10,027[1]	[2]	1,794,643,051	716,155,593	591,438	3,426,617,326	1,631,974,275
1926	9,903	2,819,189,700	1,790,611,294	738,208,510	602,343	3,419,814,877	1,629,203,583
1927	10,037[1]	[2]	1,678,812,411	705,929,540	578,068	3,317,851,888	1,639,039,477
1928	9,971	2,735,070,138	1,663,155,564	670,063,291	540,927	3,224,227,651	1,561,072,087
1929[3]	9,984	[2]	1,683,301,810	689,410,704	561,088	3,386,892,842	1,703,591,032

A comparison of the totals for 1929 with the corresponding totals for 1928 shows that there was an increase in each of the principal items. The increase of 20,161, or 3.7 per cent, in the average number of wage-earners employed in 1929 (561,088) over the average number employed in 1928 (540,927) was due in some measure to improved conditions in 1929 in the cotton goods industry in New Bedford, in which city there occurred a prolonged strike of textile workers in 1928.

Cities. Principal data having reference to manufactures in each of the 39 cities of the commonwealth, with totals for the state and for the 316 towns grouped together, are presented in Table 10.

The total value of products manufactured in the 39 cities in 1929 was $2,643,749,069, and constituted 78.1 per cent of the aggregate value ($3,386,892,842) of all products manufactured in the commonwealth in that year, and the average number of wage-earners (422,944) employed in the manufacturing industries in the 39 cities constituted 75.4 per cent of the average number of wage-earners (561,088) employed in all manufacturing establishments in the state.

As a manufacturing center Boston ranked first among the cities of the commonwealth and the value of the products manufactured in the city in 1929 was $617,635,055, constituting 18.2 per cent of the aggregate value of all products manufactured in the entire state during the year. In order of importance, based on the value of products manufactured in 1929, the twenty leading cities were: Boston, Worcester, Cambridge, Lawrence, New Bedford, Springfield, Lynn, Somerville, Fall River, Everett, Holyoke, Chicopee, Brockton, Lowell, Pittsfield, Haverhill, Fitchburg, Peabody, Attleboro, and Taunton.

Towns. The total value of products manufactured in the 316 towns in 1929 ($743,143,773) constituted 21.9 per cent of the aggregate value ($3,386,892,842) of all products manufactured in the commonwealth in that year,

[1]The Census of Manufactures for the years 1914, 1919, 1921, 1923, 1925, and 1927 included certain establishments not canvassed in the other years, but these establishments added relatively little to the other items specified.

[2]Not called for on the questionnaire.

[3]Data for 1929 are the result of preliminary tabulation, and are subject to correction.

and the average number of wage-earners (138,144) employed in the manufacturing industries in the 316 towns constituted 24.6 per cent of the average number of wage-earners (561,088) employed in all manufacturing establishments in the state.

In order of importance, based on the value of products manufactured in 1929, the twenty leading manufacturing towns were: Watertown, Walpole, Norwood, Framingham, West Springfield, Easthampton, Southbridge, Amesbury, Plymouth, Braintree, Clinton, Athol, Andover, Palmer, North Attleboro, Whitman, Weymouth, Webster, Uxbridge, and Northbridge.

Principal data relative to manufacturing in each of the towns of the commonwealth, for which figures may be presented, without disclosing the operations of individual establishments, are given in Table 11.

Table 10—Principal Data Relative to Manufactures in the 39 Cities in Massachusetts, 1929

(Preliminary tabulation, subject to corrections)

Cities	Number of Establishments	Value of Stock and Materials Used	Amount of Wages Paid during the Year	Average Number of Wage-earners Employed	Value of Products
The State	**9,984**	**$1,683,301,810**	**$689,410,704**	**561,088**	**$3,386,892,842**
39 Cities	*8,018*	*1,312,422,284*	*529,844,546*	*422,944*	*2,643,749,069*
Attleboro	137	16,437,569	7,636,032	6,080	32,770,521
Beverly	49	3,270,456	5,745,059	3,940	13,100,774
Boston	2,758	296,385,634	106,925,144	76,879	617,635,055
Brockton	244	37,252,936	15,356,607	12,595	68,417,395
Cambridge	390	75,880,783	28,078,148	21,857	174,621,196
Chelsea	128	11,860,281	6,929,570	5,330	27,638,009
Chicopee	55	38,654,050	13,289,710	10,176	72,557,285
Everett	117	45,717,822	9,993,308	6,375	78,218,918
Fall River	225	56,793,290	21,718,585	23,977	96,539,979
Fitchburg	109	23,992,093	8,357,496	6,709	43,839,865
Gardner	78	8,159,932	5,183,288	4,334	19,468,632
Gloucester	81	7,715,831	2,936,546	2,288	13,827,974
Haverhill	296	26,305,661	11,354,320	9,122	48,782,905
Holyoke	155	37,380,651	16,406,352	13,780	76,250,756
Lawrence	172	72,288,428	26,978,726	23,139	126,556,331
Leominster	74	9,356,919	5,387,290	5,196	21,957,581
Lowell	219	34,947,047	16,670,775	16,599	66,875,787
Lynn	361	48,750,489	28,366,188	20,544	119,724,709
Malden	101	12,334,841	4,171,025	4,004	26,230,346
Marlborough	31	6,615,830	3,280,755	3,034	12,072,973
Medford	58	5,742,613	1,731,450	1,353	9,979,215
Melrose	25	900,307	348,922	317	2,108,575
New Bedford	193	63,865,959	31,407,670	32,155	121,692,217
Newburyport	57	6,333,835	3,315,284	3,147	13,082,572
Newton	71	7,721,857	4,254,165	3,489	19,027,439
North Adams	42	14,170,091	4,904,355	4,142	24,015,653
Northampton	50	6,022,755	3,916,979	3,118	14,592,593
Peabody	87	19,360,522	8,054,087	6,550	34,572,047
Pittsfield	59	24,895,928	14,038,825	9,664	60,864,736
Quincy	165	9,393,314	8,064,426	4,913	27,150,742
Revere	17	329,360	295,152	224	1,076,094
Salem	127	14,031,349	5,552,414	4,883	28,878,845
Somerville	133	81,536,391	9,384,154	6,701	113,643,652
Springfield	326	51,119,049	25,677,571	18,812	121,218,031
Taunton	100	16,548,692	6,517,567	5,852	32,123,201
Waltham	80	6,150,376	6,177,311	5,077	18,526,250
Westfield	64	5,491,982	3,303,438	2,736	13,466,082
Woburn	46	7,860,054	2,774,264	2,031	14,859,920
Worcester	538	100,847,307	45,361,588	31,822	215,784,214
316 Towns	*1,966*	*370,879,526*	*159,566,158*	*138,144*	*743,143,773*

Table 11—Principal Data Relative to Manufactures in the 316 Towns in Massachusetts, 1929

(Preliminary tabulation subject to corrections)

Towns[1]	Number of Establishments	Value of Stock and Materials Used	Amount of Wages Paid during the Year	Average Number of Wage-earners Employed	Value of Products
The State	**9,984**	**$1,683,301,810**	**$689,410,704**	**561,088**	**$3,386,892,842**
39 Cities	*8,018*	*1,312,422,284*	*529,844,546*	*422,944*	*2,643,749,069*
316 Towns[1]	*1,966*	*370,879,526*	*159,566,158*	*138,144*	*743,143,773*
Abington	16	1,768,638	736,395	679	3,481,596
Acton	6	875,293	272,798	227	1,594,020
Adams	22	4,498,516	2,912,800	2,941	9,847,394
Amesbury	36	10,162,945	5,219,260	3,760	18,863,042
Amherst	13	362,003	161,538	219	947,508
Andover	16	7,057,451	2,555,355	2,046	12,931,291
Arlington	26	946,391	433,209	293	2,251,672
Ashburnham	7	314,207	427,829	398	1,139,144
Ashland	6	789,146	313,881	271	2,244,044
Athol	37	4,536,954	2,927,628	2,508	12,952,302
Ayer	9	101,092	152,940	129	629,620
Barnstable	7	85,634	68,170	71	267,767
Barre	5	1,476,793	893,530	771	3,435,669
Becket	5	140,447	165,691	119	463,007
Belmont	8	78,357	77,260	52	231,238
Billerica	9	6,122,222	2,437,148	1,684	9,750,100
Braintree	22	11,587,997	2,627,289	1,711	17,652,106
Bridgewater	13	3,074,528	1,416,691	1,246	5,334,121
Brookline	21	905,802	489,030	467	2,142,206
Canton	21	4,264,023	1,486,875	1,323	8,166,020
Chelmsford	9	379,449	443,877	350	1,551,845
Chester	3	310,457	249,274	177	888,471
Clinton	22	7,194,677	3,115,753	2,763	13,159,427
Concord	13	277,464	232,409	216	828,112
Dalton	7	2,227,991	962,354	888	5,132,163
Danvers	16	2,546,867	1,147,381	1,023	5,655,787
Dedham	14	560,849	364,498	336	1,364,723
Deerfield	9	516,455	187,022	150	959,135
Dudley	8	2,929,137	1,142,052	1,107	3,854,346
Easthampton	16	12,773,431	3,417,289	3,493	20,353,285
Easton	8	924,651	596,223	491	2,126,262
Foxborough	10	945,009	748,128	600	3,980,369
Framingham	50	12,544,506	5,289,779	3,787	22,823,177
Franklin	23	4,086,350	1,326,504	970	6,394,698
Grafton	9	2,386,138	1,360,976	1,364	5,118,634
Great Barrington	14	1,395,845	898,035	792	2,324,550
Greenfield	39	2,193,937	2,219,351	1,699	8,424,251
Hanover	5	637,926	662,050	832	2,936,666
Hingham	5	30,950	151,390	89	277,605
Hudson	25	3,549,608	3,100,720	2,402	8,890,115
Huntington	3	12,435	15,991	14	52,962
Kingston	7	834,227	255,769	194	1,394,963
Lee	8	1,831,499	754,146	587	3,820,937
Leicester	7	1,612,278	817,220	735	2,377,624
Lynnfield	3	32,811	17,981	16	71,235
Mansfield	16	2,729,383	938,584	694	4,849,757
Marblehead	17	318,017	331,027	290	793,867
Medway	7	767,715	483,732	355	1,562,299
Merrimac	7	663,793	651,296	363	1,906,859
Methuen	27	5,462,762	1,399,735	1,466	8,091,505
Middleborough	21	2,465,481	926,180	918	4,743,044
Milford	28	3,723,902	1,806,089	1,583	6,533,305
Millbury	22	4,239,819	1,576,237	1,171	8,258,865
Milton	7	60,095	37,276	36	214,995
Montague	21	3,537,859	1,808,014	1,429	7,297,301
Natick	34	2,599,103	890,915	856	4,841,827
Needham	30	1,662,223	739,723	717	3,782,225
North Andover	8	3,512,525	1,552,990	1,320	5,951,894
North Attleborough	66	3,956,074	3,259,417	2,632	11,115,971
North Brookfield	7	2,041,960	751,645	747	3,660,344
Northbridge	8	4,233,541	3,636,063	3,052	10,004,447
Norton	8	372,691	490,549	399	1,173,456
Norwood	25	11,036,871	4,069,549	2,686	23,736,439
Orange	20	1,835,342	1,105,735	1,091	5,962,622
Oxford	8	1,320,429	726,742	752	2,586,286
Palmer	19	4,989,925	2,604,381	2,166	11,655,836
Plainville	6	432,838	619,204	628	2,015,989
Plymouth	20	10,690,591	2,631,229	2,581	18,254,006
Provincetown	4	17,952	8,627	9	45,002

Table 11—Principal Data Relative to Manufactures in the 316 Towns in Massachusetts, 1929—Concluded

(Preliminary tabulation, subject to corrections)

Towns[1]	Number of Establishments	Value of Stock and Materials Used	Amount of Wages Paid during the Year	Average Number of Wage-earners Employed	Value of Products
Randolph	10	$644,238	$287,735	252	$1,160,139
Reading	15	1,759,455	593,323	417	4,240,322
Rockland	21	4,032,045	1,486,881	1,215	7,427,756
Rockport	4	372,582	266,509	169	1,021,361
Saugus	13	337,773	239,649	145	816,319
South Hadley	11	1,301,935	538,717	432	2,645,939
Southbridge	28	6,398,407	4,510,883	3,789	19,110,237
Spencer	14	3,706,739	1,421,813	1,293	5,908,536
Stoneham	18	1,743,047	1,073,466	920	3,857,655
Stoughton	30	5,060,192	1,787,688	1,553	9,572,420
Templeton	12	858,540	577,798	459	2,069,371
Townsend	6	550,862	323,804	263	1,120,895
Uxbridge	8	6,239,265	1,920,223	1,578	10,172,282
Wakefield	25	3,520,974	1,801,255	1,473	7,140,613
Walpole	15	15,241,566	2,683,070	1,873	24,993,898
Ware	17	2,912,595	1,242,466	1,397	6,344,758
Wareham	9	624,578	323,839	258	1,011,986
Warren	6	1,546,449	1,020,509	1,005	3,044,677
Watertown	41	15,713,391	9,518,683	7,229	33,576,233
Webster	17	5,096,696	2,597,818	2,480	10,256,806
Wellesley	14	714,649	257,258	159	3,243,082
West Springfield	28	9,390,544	5,187,440	3,325	20,931,716
West Stockbridge	5	157,183	94,428	67	402,898
Westborough	13	888,581	512,488	425	1,987,714
Weymouth	22	5,303,474	1,938,669	1,630	10,279,833
Whitman	22	5,718,279	2,146,295	1,658	11,096,356
Winchendon	17	2,649,911	1,281,000	1,280	5,904,574
Winchester	20	3,092,114	1,001,399	1,006	5,530,280
Winthrop	10	185,446	62,639	49	408,005
All other towns[1]	421	70,563,739	24,571,985	26,414	139,743,762

Metropolitan Boston. As defined for purposes of the annual census of manufactures in Massachusetts, Metropolitan Boston comprises 14 cities and 26 towns included within a radius of about 15 miles from the State House in Boston. Within this area were located 4,804 manufacturing establishments in which products valued at $1,357,941,743 were manufactured in 1929. The average number of wage-earners employed in these establishments during the year was 177,537, and the total amount paid in wages was $240,942,608. The number of manufacturing establishments in Metropolitan Boston in 1929 constituted 48.1 per cent of the total number (9,984) in the entire state; the value of products manufactured constituted 40.1 per cent of the total value of all products manufactured in the state; and the number of wage-earners in the district was 31.6 per cent of the total number employed in all manufacturing establishments in the state.

Principal data relative to manufacturing in each of the cities and towns in Metropolitan Boston in 1929 are presented in Table 12, and the totals for Metropolitan Boston for each of the years, 1921 to 1929, inclusive, are presented in Table 13.

[1]For 144 towns data cannot be presented without disclosing the operations of individual establishments and in 74 towns there were no manufacturing establishments coming within the scope of the census; i. e., with product during the year valued in excess of $5,000.

Table 12—Principal Data Relative to Manufactures in Metropolitan Boston,[1] 1929: By Cities and Towns

(Preliminary tabulation, subject to corrections)

Municipalities	Number of Establishments	Value of Stock and Materials Used	Amount of Wages Paid during the Year	Average Number of Wage-earners Employed	Value of Products
Metropolitan Boston [1]	**4,804**	**$663,919,890**	**$240,942,608**	**177,537**	**$1,357,941,743**
The 14 Cities	*4,450*	*610,564,122*	*217,493,227*	*159,094*	*1,250,440,120*
Boston	2,758	296,385,634	106,925,144	76,879	617,635,055
Cambridge	390	75,880,783	28,078,148	21,857	174,621,196
Chelsea	128	11,860,281	6,929,570	5,330	27,638,009
Everett	117	45,717,822	9,993,308	6,375	78,218,918
Lynn	361	48,750,489	28,366,188	20,544	119,724,709
Malden	101	12,334,841	4,171,025	4,004	26,230,346
Medford	58	5,742,613	1,731,450	1,353	9,979,215
Melrose	25	900,307	348,922	317	2,108,575
Newton	71	7,721,857	4,254,165	3,489	19,027,439
Quincy	165	9,393,314	8,064,426	4,913	27,150,742
Revere	17	329,360	295,152	224	1,076,094
Somerville	133	81,536,391	9,384,154	6,701	113,643,652
Waltham	80	6,150,376	6,177,311	5,077	18,526,250
Woburn	46	7,860,054	2,774,264	2,031	14,859,920
The 26 Towns	*354*	*53,355,768*	*23,449,381*	*18,443*	*107,501,623*
Arlington	26	946,391	433,209	293	2,251,672
Belmont	8	78,357	77,260	52	231,238
Braintree	22	11,587,997	2,627,289	1,711	17,652,106
Brookline	21	905,802	489,030	467	2,142,206
Canton	21	4,264,023	1,486,875	1,323	8,166,020
Dedham	14	560,849	364,498	336	1,364,723
Hingham	5	30,950	151,390	89	277,605
Milton	7	60,095	37,276	36	214,995
Needham	30	1,662,223	739,723	717	3,782,225
Reading	15	1,759,455	593,323	417	4,240,322
Saugus	13	337,773	239,649	145	816,319
Stoneham	18	1,743,047	1,073,466	920	3,857,655
Wakefield	25	3,520,974	1,801,255	1,473	7,140,613
Watertown	41	15,713,391	9,518,683	7,229	33,576,233
Wellesley	14	714,649	257,258	159	3,243,082
Weymouth	22	5,303,474	1,938,669	1,630	10,279,833
Winchester	20	3,092,114	1,001,399	1,006	5,530,280
Winthrop	10	185,446	62,639	49	408,005
8 other towns	22	888,758	556,490	391	2,326,491

[1]Includes three towns (Cohasset, Hull, and Nahant) in which there were no manufacturing establishments, and five towns (Dover, Lexington, Swampscott, Weston, and Westwood) for which data cannot be shown separately without disclosing the operations of individual establishments.

Table 13—Principal Data Relative to Manufactures in Metropolitan Boston, 1921–1929

Years	Number of Establishments	Capital Invested	Value of Stock and Materials Used	Amount of Wages Paid during the Year	Average Number of Wage-earners Employed	Value of Products
1921	4,508	[1]	$519,832,014	$202,173,388	168,313	$1,025,586,110
1922	4,482	$804,668,324	537,911,241	210,657,440	178,343	1,070,493,317
1923	4,740	[1]	620,031,648	245,640,825	193,000	1,232,206,787
1924	4,561	849,235,200	584,512,038	230,727,844	178,487	1,148,260,013
1925	4,511	[1]	606,378,433	231,857,192	175,801	1,235,875,285
1926	4,577	851,797,589	639,566,767	245,916,443	184,814	1,272,959,199
1927	4,755	[1]	633,003,950	237,708,229	178,316	1,289,801,723
1928	4,713	897,124,478	648,665,366	235,017,427	174,522	1,278,895,983
1929	4,804	[1]	663,919,890	240,942,608	177,537	1,357,941,743

[1]Not called for on the questionnaire.

3. Census of Distribution, 1929

The Federal Census Act, approved June 18, 1929, provided that, in addition to the census of population and certain other branches of the census, there should be taken in 1930, a "census of distribution" for the year, 1929. In November, 1929, the Massachusetts department of labor and industries and the United States bureau of the census entered into an agreement providing for co-operation in the taking of the censuses of manufactures and distribution within Massachusetts, and the director of statistics was appointed supervisor of both branches of this work. In the preceding section of this report the results of a preliminary tabulation, by the division of statistics, of the returns of the census of manufactures have been presented. The tabulation of the returns of the census of distribution is being made by the bureau of the census at Washington, and the results are to be published by that bureau, but, inasmuch as the department, through the division of statistics, co-operated in taking the census of distribution in Massachusetts, a statement relative to this census is included in this report.

The census of distribution covered all retail and wholesale stores and other sales agencies. Manufacturers' sales agencies were also included but the returns for such agencies were obtained in most instances directly from the manufacturers in connection with their reports relative to manufactures.

The questionnaires used in connection with this census included the following principal inquiries: type of business; number of proprietors and firm members; number of employees; total salaries and wages paid; rent paid for premises; interest, if any, paid on borrowed money; taxes; insurance; office and other expenses; value of stock on hand at the close of the year; and value of merchandise sold, classified by cash and credit sales. For establishments whose volume of sales exceeded $60,000 during the year 1929, a classification of sales by principal commodities was also requested.

This was the first national census of distribution taken in the United States, and as there were no complete lists of distributors available for use in conducting a thorough canvass by mail, the collection of the reports was accomplished largely by enumerators who were instructed to call at each store or other distributing agency in the district assigned to them, to advise the proprietors as to the nature of the information required, and to secure a correct and certified report of the operations of such establishments during the year, 1929.

Early in March, 1930, the first group of enumerators was assigned to the outlying wards in the city of Boston, and on completion of their first assignments, those who were found to be most efficient were assigned to the business sections of the city where the canvass was much more difficult. Shortly thereafter enumerators were assigned to the cities and towns in the vicinity, and by the close of March at least 50 enumerators had been appointed and assigned to districts. The immediate supervision of the distribution enumerators in 10 of the 14 "population districts" into which the state had been divided, was transferred, as of April 15, to the "population supervisors" of the respective districts, and thereafter the enumerators in those 10 districts, all of which were at some distance from Boston, reported directly to their local supervisors, who examined the reports and forwarded them to the Boston office.

The total number of persons employed in connection with the census of distribution in Massachusetts (for a shorter or longer period, but not all at one time) was 137, of whom 15 were employed in the office and 122 were employed as enumerators in the field. The entire expense of this census, other than incidental office expenses, was borne by the federal bureau of the census.

Approximately 59,500 distribution reports were collected by this division, and forwarded to Washington. The division also assisted in the collection of reports from building contractors and hotels in Massachusetts, a canvass of which was first undertaken by mail by the bureau of the census directly from its Washington office. Nearly 800 reports from building contractors and over 200 reports from hotels were collected by this department and forwarded to Washington.

4. Public Employment Offices

This report covers the operations, during the calendar year, 1930, of the four public employment offices maintained by the commonwealth. These offices are located, respectively, at 23 Pearl Street, Boston (main office); 25 Tremont Street, Boston (mercantile office); Worthington Street and Columbus Avenue, Springfield; and 23 Foster Street, Worcester. The statistical data herein presented, and, more particularly, the numbers of persons called for by employers and the numbers of positions reported filled, furnish a record of the services rendered by these offices to employers and applicants for employment. Comparable data for the calendar year, 1929, are presented for purposes of comparison.

Statistical Summary

The principal data relative to the work of the offices during the year, 1930, with corresponding data for the year, 1929, are presented in Table 14.

Table 14—Summary of Business of the Four State Public Employment Offices, during the Years 1930 and 1929

Offices	1930			1929		
	Persons Called for by Employers	Persons Referred to Positions	Positions Reported Filled	Persons Called for by Employers	Persons Referred to Positions	Positions Reported Filled
Boston—main office	10,887	15,019	8,760	16,780	22,319	13,558
Boston—mercantile office	900	1,116	798	1,431	1,701	1,238
Springfield office	6,577	7,654	5,753	10,464	11,544	9,071
Worcester office	4,864	5,402	4,119	8,020	8,334	6,290
Totals—four offices	*23,228*	*29,191*	*19,430*	*36,695*	*43,898*	*30,157*

Positions Reported Filled. The total number of positions reported filled during the year 1930, by the four offices combined, was 19,430, which was less by 10,727, or 35.6 per cent, than the number (30,157) reported filled during the year 1929. At each of the offices there was a large decrease in the number of positions reported filled, and for each office there was a decrease of about one-third in the number of places filled. Thus, at the main office in Boston there was a decrease of 35.4 per cent; at the mercantile office in Boston, a decrease of 35.5 per cent; at the Springfield office, a decrease of 36.6 per cent; and at the Worcester office, a decrease of 34.5 per cent. From each of the offices, registrars have been sent out regularly to call upon employers for the purpose of acquainting them with the work of the offices, and through advertising and circular letters an endeavor has been made to secure as many orders as possible from employers.

Persons Called for by Employers. During the year 1930 the total number of persons called for by employers at the four offices combined was 23,228, which was less by 13,467, or 36.7 per cent, than the number (36,695) called for during the year 1929. Of the total number of persons called for by employers in 1930, 83.6 per cent were supplied, as compared with 82.2 per cent supplied in 1929.

Persons Referred to Positions. The total number of persons referred to positions by the four offices combined during the year 1930 was 29,191. A large number of those referred to positions either failed to secure or declined to accept appointment. The total number of positions reported filled in 1930 was 19,430, and in order to fill these positions, 29,191 persons were referred, or an average of 1.5 persons for each position filled.

Records by Sex. In Table 15, principal data for the year 1930 are presented by sex for each of the four offices, separately, and for the four offices combined.

Table 15—Summary of Business of the Four State Public Employment Offices during the Years 1930 and 1929: By Offices and Sex

Classification	1930				1929			
	Registrations	Persons Called for by Employers	Persons Referred to Positions	Positions Reported Filled	Registrations	Persons Called for by Employers	Persons Referred to Positions	Positions Reported Filled
Boston–Main Office:								
Males	4,989	7,865	10,766	6,288	6,820	11,942	15,756	9,609
Females	1,631	3,022	4,253	2,472	2,051	4,838	6,563	3,949
Totals	*6,620*	*10,887*	*15,019*	*8,760*	*8,871*	*16,780*	*22,319*	*13,558*
Boston—Mercantile Office								
Males	2,401	192	227	156	2,043	262	335	201
Females	3,309	708	889	642	3,001	1,169	1,366	1,037
Totals	*5,710*	*900*	*1,116*	*798*	*5,044*	*1,431*	*1,701*	*1,238*
Springfield:								
Males	3,129	4,274	4,874	3,943	3,696	7,081	7,870	6,378
Females	2,525	2,303	2,780	1,810	2,023	3,383	3,674	2,693
Totals	*5,654*	*6,577*	*7,654*	*5,753*	*5,719*	*10,464*	*11,544*	*9,071*
Worcester:								
Males	2,824	2,838	3,102	2,543	2,494	4,870	5,169	3,983
Females	1,324	2,026	2,300	1,576	1,391	3,150	3,165	2,307
Totals	*4,148*	*4,864*	*5,402*	*4,119*	*3,885*	*8,020*	*8,334*	*6,290*
Four Offices Combined:								
Males	13,343	15,169	18,969	12,930	15,053	24,155	29,130	20,171
Females	8,789	8,059	10,222	6,500	8,466	12,540	14,768	9,986
Totals	*22,132*	*23,228*	*29,191*	*19,430*	*23,519*	*36,695*	*43,898*	*30,157*

Of the 19,340 positions reported filled during the year 1930 by the four offices combined, 12,930, or nearly two-thirds (66.5 per cent), were filled by males. At the main office in Boston, which is engaged principally in the placement of manual workers (skilled and unskilled), 71.8 per cent of the positions were filled by males. The mercantile office in Boston, which was established primarily for the purpose of securing positions for stenographers, bookkeepers, clerks, salespeople, and other employees in stores and offices, operates in a field of employment in which females predominate, and the number of positions filled by males constituted only 19.5 per cent of the total number of positions filled by that office. At the Springfield office the number of positions filled by males constituted 68.5 per cent of the total number of positions filled by that office. At the Worcester office, 61.7 per cent of the total number of positions were filled by males. At the Springfield and Worcester offices there was a relatively greater demand for domestic workers than at the main office in Boston.

Records by Months. The principal data relative to the activities of the four offices during the years 1930 and 1929, are summarized, by months, in Table 16.

Veterans. Special attention is given at each of the four state offices to the placement of veterans, and records relative to the service rendered them are kept separately. A summary of these records for the years 1930 and 1929, by offices, appears in Table 17.

The total number of veterans registered at the four offices during the year 1930 was 1,284, showing a decrease of 152, or 10.6 per cent, when compared with the number (1,436) registered in 1929. The total number of positions reported filled by veterans in 1930 was 2,038, which was less by 492, or 15.5 per cent, than the number (2,530) of positions reported filled by veterans in 1929. In explanation of the fact that the number of positions reported filled by veterans, and the number of veterans referred to positions

Table 16—Summary of Business of the Four State Public Employment Offices during the Years 1930 and 1929: By Months

Months	1930					1929				
	Office Days	Registrations	Persons Called for by Employers	Persons Referred to Positions	Positions Reported Filled	Office Days	Registrations	Persons Called for by Employers	Persons Referred to Positions	Positions Reported Filled
January	26	2,171	1,737	2,248	1,511	26	1,972	2,482	3,047	2,095
February	23	1,508	1,439	1,833	1,210	23	1,622	2,052	2,582	1,620
March	26	1,922	1,908	2,507	1,580	26	1,801	2,561	3,169	2,091
April	25	2,252	2,657	3,437	2,224	25	2,162	3,404	4,067	2,671
May	26	2,201	2,787	3,439	2,254	26	2,248	3,928	4,532	3,237
June	25[1]	2,126	2,248	2,835	1,850	25[1]	2,251	3,772	4,314	2,969
July	26	1,629	1,775	2,150	1,526	26	2,085	3,315	3,905	2,780
August	26	1,480	1,627	1,979	1,354	27	1,790	3,137	3,640	2,593
September	25	2,208	2,265	2,880	1,859	24	2,402	4,042	4,860	3,239
October	26	1,696	1,882	2,241	1,573	26	2,276	3,871	4,729	3,256
November	24	1,490	1,425	1,766	1,250	24	1,577	2,348	2,853	2,031
December	26	1,449	1,478	1,873	1,239	25	1,333	1,783	2,200	1,575
Totals	*304*	*22,132*	*23,228*	*29,188*	*19,430*	*303*	*23,519*	*36,695*	*43,898*	*30,157*

[1]The Boston offices were closed June 17th.

exceeded the number of veterans registered, it should be stated that many of those registered were referred to more than one position or placed in more than one position during the year specified. Of the 12,930 positions reported filled by males during the year 1930, by the four offices combined, 2,038, or 15.7 per cent, were filled by veterans.

Classification by Industries and Occupations. In Table 18 data are presented showing the number of persons called for by employers and the number of positions reported filled in 1930, classified by industries or occupations represented, and by offices.

Casual workers, common laborers, and persons in domestic and personal service, together numbering 13,560, constituted 58.4 per cent of the total number (23,228) of persons called for by employers at the four offices in 1930, and, of the 19,430 positions reported filled, 11,952, or 61.5 per cent, were filled by applicants classified within these groups. The building and construction industries, metal and machine trades, and clerical occupations were also well represented. Special efforts have been made to increase the service rendered to persons seeking employment in stores and offices, and 1,139 positions of this nature were filled by the four offices in 1930. The mercantile office in Boston was established in January, 1922, primarily for the placement of applicants for such employment.

Table 17—Number of Veterans Registered, Referred to Positions, and Number of Positions Reported Filled by Veterans, 1930 and 1929: By Offices

Offices	1930			1929		
	Registrations[1]	Referred to Positions[2]	Positions Reported Filled[2]	Registrations[1]	Referred to Positions[2]	Positions Reported Filled[2]
Boston (main office)	740	1,820	953	1,100	2,707	1,294
Boston (mercantile office)	80	21	17	88	35	21
Springfield	343	971	869	199	1,011	869
Worcester	121	243	199	49	422	346
Totals	*1,284*	*3,055*	*2,038*	*1,436*	*4,175*	*2,530*

[1]Applicants for positions are registered but once each year, regardless of the number of times they apply for positions during the year.

[2]Includes duplications of individuals who were referred to more than one position or placed in more than one position during the year

Table 18—Number of Persons Called for by Employers and Number of Positions Reported Filled in 1930: By Industries and Offices

Industries and Occupations	Number of Persons Called for by Employers				Number of Positions Reported Filled			
	Boston, Main Office	Boston, Mercantile Office	Springfield Office	Worcester Office	Boston, Main Office	Boston, Mercantile Office	Springfield Office	Worcester Office
Agriculture	64	–	259	218	46	–	227	170
Building and construction	1,728	–	412	242	1,417	–	371	205
Casual workers	2,178	–	3,645	2,674	2,090	–	3,603	2,680
Chemicals, oils, paints, etc.	6	–	–	–	10	–	–	–
Clay, glass and stone products.	3	–	–	1	3	–	–	1
Clerical, professional, and technical.	7	681	72	67	4	635	42	33
Clothing and textiles	262	–	25	24	188	–	21	18
Common labor (not casual workers)	796	–	319	128	729	–	246	115
Domestic and personal service	1,826	–	1,032	962	1,361	–	576	552
Food, beverages, and tobacco	88	–	14	9	71	–	9	8
Leather, rubber, and allied products	210	–	–	12	159	–	–	11
Lumber	–	–	32	58	–	–	29	43
Metals and machinery	1,024	–	317	154	669	–	268	104
Musical instruments	9	–	–	–	4	–	–	–
Paper and printing	602	–	41	12	465	–	24	7
Shipbuilding.	425	–	4	4	214	–	–	–
Theatres and amusements	25	–	6	10	16	–	2	9
Transportation and public utilities	147	–	71	45	97	–	67	31
Wholesale and retail trade	118	219	138	137	98	163	100	64
Woodworking and furniture	75	–	7	16	35	–	7	12
Miscellaneous	1,294	–	183	91	1,084	–	161	56
Totals	*10,887*	*900*	*6,577*	*4,864*	*8,760*	*798*	*5,753*	*4,119*

Co-operation with the United States Employment Service

During the past year the department continued to co-operate with the United States employment service. The commissioner of labor and industries serves as federal director for Massachusetts. The federal service provides for the payment of salaries of two employees, one of whom serves as examiner-in-charge of the mercantile employment office in Boston, and the other as superintendent of the Westfield office (a federal municipal office). The total contribution of the federal bureau toward the employment service in Massachusetts during the calendar year on account of salaries was $4,281.34, and there was also some saving to the department as a result of the use of the franking privilege.

In addition to the four state offices, twelve other offices in Massachusetts are now co-operating with the federal service. These are as follows:

Boston	Municipal Employment Bureau
Boston	Boston Urban League
Chelsea	Chamber of Commerce
Chelsea	Municipal Employment Bureau
Fitchburg	American Legion, Post No. 10
Framingham	Civic League
Lowell	Civic Employment Bureau
Lowell	Employment Bureau
Lynn	Municipal Employment Bureau
Somerville	Municipal Employment Bureau
Waltham	Chamber of Commerce
Westfield	Municipal Employment Bureau (federal-municipal)

The Chelsea Municipal Employment Bureau, the Lowell Employment Bureau, and the Lynn Municipal Employment Bureau entered into co-operative relations with the federal service toward the close of the year,

and the bureau formerly maintained by the Watertown Chamber of Commerce was closed in March, 1930.

The co-operating offices are required to furnish monthly reports and to conform to certain regulations with reference to their operation. The federal service supplies certain standard forms for their use, grants the use of the franking privilege in connection with their placement work, and, in some instances, has loaned them furniture and office equipment.

REPORT OF THE MASSACHUSETTS INDUSTRIAL COMMISSION

LEON M. LAMB, *Executive Secretary*

The first annual report of the Massachusetts industrial commission covering the period from its organization in August 1929, to November 30, 1930, is submitted herewith.

ACT ESTABLISHING MASSACHUSETTS INDUSTRIAL COMMISSION

The commission was established by an act of the legislature approved May 29, 1929, known as chapter 357 hereinafter quoted.

AN ACT ESTABLISHING THE MASSACHUSETTS INDUSTRIAL COMMISSION FOR THE PROMOTION AND DEVELOPMENT OF THE INDUSTRIAL, AGRICULTURAL AND RECREATIONAL RESOURCES OF THE COMMONWEALTH.

Whereas, The deferred operation of this act would tend to defeat its purpose, therefore it is hereby declared to be an emergency law, necessary for the immediate preservation of the public convenience.

Section 1. Chapter twenty-three of the General Laws is hereby amended by inserting after section nine, under the caption "THE MASSACHUSETTS INDUSTRIAL COMMISSION," the following three new sections:—*Section 9A.* There shall be in the department a commission for the promotion and development of the industries and industrial, agricultural and recreational resources of the commonwealth, to be known as the Massachusetts industrial commission, in this and the two following sections called the commission. The commission shall consist of the commissioner and the commissioner of agriculture, ex officiis, and five unpaid members appointed by the governor, with the advice and consent of the council, who shall be designated in their initial appointments to serve respectively for one, two, three, four and five years. The commission shall annually choose one of its members as a chairman. One of the members appointed by the governor as aforesaid shall always be a representative of labor. Upon the expiration of the term of office of an appointive member, a successor shall be appointed in the manner aforesaid for five years. The commission shall meet at least once a month and at such other times as it shall determine by its rules. The members shall receive their necessary traveling expenses while in the performance of their official duties.

Section 9B. Subject to the approval of the governor and council, the commission may appoint and fix the compensation of a secretary and such experts as it may require and may remove them with like approval. It may also employ such other necessary clerks and employees as it may require and fix their compensation. Authorized representatives of the commission may travel outside the commonwealth for the purpose of carrying out the provisions of section nine C.

Section 9C. The commission may conduct researches into industrial and agricultural conditions within the commonwealth, and shall seek to coördinate the activities of unofficial bodies organized for the promotion of the industrial, agricultural and recreational interests in the commonwealth, and may prepare, print and distribute books, maps, charts and pamphlets which in its judgment will further the purpose for which it is created, and, on behalf of the commonwealth may ac-

cept contributions and, subject to the approval of the governor and council, may expend the same and also may expend such sums as may be appropriated by the general court to carry out the purpose of this and the two preceding sections.

Section 2. Sections ten and eleven of said chapter twenty-three and section one hundred and seventy-four of chapter one hundred and forty-nine of the General Laws, as amended by section one of chapter two hundred and ninety-two of the acts of nineteen hundred and twenty-seven, are hereby repealed. *(Approved May 29, 1929.)*

Members of Commission

The members of the commission appointed by the governor with the advice and consent of the council are as follows:

Commissioners	*Term of office*
Colonel Frederick H. Payne, Greenfield	5 years
Paul E. Fitzpatrick, Brookline	4 years
Louis E. Kirstein, Boston	3 years
Thomas G. O'Hare, Norfolk Downs	2 years
Andrew Raeburn, New Bedford	1 year

Members ex Officiis

General E. Leroy Sweetser, Commissioner of Labor and Industries
Dr. Arthur W. Gilbert, Commissioner of Agriculture.

The commission held its meeting for organization August 1, 1929, and elected Colonel Frederick H. Payne, chairman. Since that date regular monthly meetings have been held and several special meetings.

In May, 1930, Colonel Payne resigned as a member of the commission, having been honored by a call from President Hoover to accept appointment as the Assistant Secretary of War. Mr. Bradbury F. Cushing of Boston was appointed by the governor to the commission to serve the unexpired term of Colonel Payne. At a meeting held June 5, 1930, Mr. Cushing was elected chairman of the commission. Mr. Raeburn was reappointed for the term of five years upon the expiration of his original term of one year.

TEXTILE INVESTIGATION

Under the resolves of 1929, chapter 54, approved June 7, 1929, quoted hereunder, the commission was authorized and directed to investigate the conditions affecting the textile industry and the problem of unemployment in that and other industries:—

"Resolved, That the Massachusetts industrial commission established by chapter three hundred and fifty-seven of the acts of the current year, is hereby authorized and directed to investigate conditions affecting the textile industry in the commonwealth with a view to devising ways and means to effect an improvement of such conditions, and also to investigate as to the best methods of alleviating distress caused by extended periods of unemployment in that and other industries, and in connection therewith to consider the question of providing insurance against unemployment. Said commission shall report to the general court the results of its investigation and its recommendations, if any, together with drafts of legislation to carry the same into effect, by filing the same with the clerk of the house of representatives on or before the first Wednesday of December of the current year."

Being unable to complete the investigation and render a report in the time allotted by the act, the commission filed a temporary report on November 30, 1929, requesting further time in which to complete the investigation which request was granted by the legislature by the

passage of a resolve known as chapter 66 of the resolves of 1930, extending the time to December 1, 1930. This report covering 346 typewritten pages with numerous tables and charts of statistical data pertaining to the manufacture of cotton textiles and woolen and worsted goods, and information as to the causes of unemployment and insurance against unemployment has taken a great amount of the time of the commission's staff. The final report was rendered and filed with the clerk of the house of representatives on December 8, 1930.

Unemployment

During the course of the investigation, public hearings were held in Boston, Fall River, Holyoke, Lowell, New Bedford, Brockton, Lawrence, Lynn, Springfield and Worcester. Official advertisements of these meetings were inserted in the press of the cities visited. While the hearings were held in the sanguine expectation of securing helpful suggestions for remedying unemployment and the improvement of the textile industry, they were not very fruitful in that respect. As many members of the commission as could do so attended these hearings, and in each instance one of the commissioners presided. Stenographic notes were taken and typewritten copies of the discussions at the hearings are on file in the office of the commission.

On invitation of the Marlborough chamber of commerce the commission paid a visit to that city on April 8, 1930 and aside from being entertained at a dinner given by that organization in the evening at which were present city officials and chamber of commerce members, the commission was shown through many of the manufacturing plants representing its diversified industries and inspected some of its fruit growing and poultry raising properties. Four members of the commission addressed the meeting. The city affords an inspiring example of what may be done in community development under proper leadership supplemented by whole-hearted coöperation.

Conferences with Labor Representatives and Manufacturers' Organizations

In connection with the investigation of the textile industry, conferences were held with representatives of labor organizations, with representatives of manufacturers' organizations and one meeting with representatives of both groups jointly for the consideration of problems affecting the industry in this state. The joint meeting was called primarily for the purpose of considering the preparation of an agendum of items mutually agreeable for discussion and regarding which there might be a possibility of a meeting of minds, the commission having particularly in view the consideration of a revision of taxation procedure now proposed. While the agendum has not yet materialized, there is still hope of achieving a desirable result.

Wage Maintenance

With the crash in the stock markets in October 1929, it immediately became apparent that there would, in all probability, follow a period of declining business with its usual accompaniment of fear, uncertainty and unemployment with, possibly, a reduction in wage rates as a first line of defense on the part of employers.

In accord with one of the suggestions which came out of President Hoover's conferences with business leaders soon after the break in the market, this commission acting on instructions from Governor Allen addressed letters to the executive heads of fourteen public utility companies and to thirty-five of the representative industrial concerns in the commonwealth, suggesting that it would be salutary at that particular juncture if assurances could be given and made public to the effect that wage rates would not be cut but would remain at the same levels

over the next several months, thereby maintaining purchasing power and tending to establish confidence.

The responses, which were made public through the press, were invariably favorable to the maintenance of wage rates then prevailing. The canvas covered companies employing approximately 187,000 persons. The letters indicated without question a sincere desire on the part of employers to keep their employees busy to the fullest extent with no intent to lower wage scales. The commission feels that this attitude on the part of the employers of labor, and the publicity it received was stimulating and beneficial in the situation which existed at that time. Furthermore, the replies lend support to the belief that there has been quite generally adopted by the employers the comparatively new economic theory that the maintenance of the purchasing power of wage earners, the greatest consumers of goods, is preferable in combating periods of depression to the old practice of immediately reducing wages.

Connecticut Valley Farm Survey

In November 1929, there was instituted a comprehensive survey of farms in the Connecticut Valley. The area investigated included 347 farms in the towns of Deerfield, Montague, Sunderland, Whately, Hatfield and Hadley. While the undertaking was sponsored by this commission, the actual work of gathering and compiling the data was done by the department of agriculture, with the hearty coöperation of the Massachusetts Agriculture College. The purpose of the survey was:

First—To find out which type of farming now practiced in the Connecticut Valley is most profitable and why.

Second—To ascertain what changes, if any, are taking place within this area.

Third—To gather specific information relative to onion production, market practices and consumer demands.

The investigation disclosed that 33 per cent of the farmers within the area made no labor income in 1929; that the highest labor incomes were made on farms combining tobacco, vegetables and onions. It also appeared that dairying in combination with vegetable and tobacco growing contributed a reasonably safe farm income. As to changes during the past few years, it is apparent that there has been a slight decrease in onion acreage and a decided change from seed onions to set onions, also, that some farms are replacing onion growing with vegetable crops, potatoes or dairying. There is a slight tendency to increased tobacco acreage.

The findings of the survey may be summarized in the words of Dr. Arthur W. Gilbert, Commissioner of Agriculture, as follows:

"Several outstanding factors have been brought out by the study which will be of material benefit to the farmers of the section and to the agriculture of the state generally. The survey was rather far reaching and the results of very considerable value. The survey of trade demands as taken from the cities of Springfield, Worcester and Boston show very definitely the need of better grading methods. Until our farmers face this issue and meet it they will continue to lose prestige in the markets. Contrary to our off-hand impression, it is not necessary for onion growers to change the varieties which they are now growing. The survey indicates that the public prefers a Connecticut type onion and in sufficient quantities to make it worth while for us to produce them. There is also a demand for mild onions, but other regions, principally southern regions and foreign countries can supply these. In short, if our growers will produce high quality onions and grade them properly, there is every reason that their business should be a successful one."

A condensed summary of the report is attached: (See Appendix A.)

Industrial Survey

In March 1930, the commission instituted an industrial development survey sending questionnaires to the secretaries of chambers of commerce, or, in the absence of a chamber of commerce to the clerks of every city and town in the state, seeking information as to the floor space available for manufacturing, kinds of manufacturing undertaken and abandoned, kinds of material or unused by-products available, kinds of industries for which there were special openings or opportunities and any arrangements formulated to assist new industries which might desire to locate, together with other questions relating to help available, power rates, water rates, etc. About three hundred and twenty-five communities in the state responded to this questionnaire.

A summary of the findings brought out by this survey was sent to every city and town in the state, to the industrial departments of the railroads serving Massachusetts, to civic organizations interested in community development and to the industrial departments of real estate agencies. As a result of this, contacts have been established with many of these organizations. The report was also accompanied by excerpts from a paper prepared by Mr. Fred Seavey, Secretary of the Lynn chamber of commerce, narrating some of the experiences cities and towns have had with new industries of an unsubstantial type. The information gathered has been of considerable service in that it has been referred to by concerns seeking new location. The commission received quite a number of complimentary letters from communities and organizations which were supplied with this report.

A copy of the report and questionnaire is attached: (See Appendix B.)

Recreational Property Survey

Property devoted to recreational purposes. During the year the commission conducted a survey to ascertain the value of property devoted to recreational purposes, similar to investigations which have been completed or are under way in other New England states, and the amount of taxes paid thereon. The information was gathered through the coöperation of the assessors of the 355 cities and towns of the commonwealth (only three failing to respond), under three classifications as follows:

1. Value of real estate owned by residents of other communities in Massachusetts and used for recreational purposes.
2. Value of real estate owned by residents of other states, and used for recreational purposes.
3. Value of property used for recreational purposes such as golf courses, summer camps, hotels etc.

The investigation showed the total assessed value of such property and taxes paid thereon, as follows:

Valuation of recreational property, including only real estate which is taxed, owned by non-residents, who are residents of other communities in Massachusetts	$115,218,711	
Taxes paid thereon		$2,991,197.46
Valuation of similar property owned by non-residents of Massachusetts	38,209,726	
Taxes paid thereon		975,067.94
Valuation of non-residential property used for seasonal, recreational purposes, such as summer hotels, golf courses, boys' and girls' summer camps, roadside camps and cottages etc.	35,930,743	
Taxes paid thereon		1,000,623.99
	$189,359,180	$4,966,889.39

While Massachusetts is commonly and properly classed as an industrial state this survey reveals the immense amount of money invested in property used largely by those who seek rest and recreation during the vacation season and find enjoyment and refreshment along our shores or among our beautiful hills. Moreover, the full report with its accompanying charts (see Appendix C) indicates great possibilities of further development of the recreational industry in certain sections of the commonwealth.

Enumeration of Foreign Cars

It is obvious to even the casual observer of traffic on our highways during the summer seasons that tourists from far and wide visit this state having as ultimate destination some point within the commonwealth or in some other New England state. For the purpose of gathering approximate data as to the states from which these tourists come, the commission during the months of July and August, placed two enumerators on the road to make test count of the foreign cars entering the commonwealth over the principal trunk lines and identify the names of the states from which they came.

According to estimate based on this survey, over a million and a quarter cars entered Massachusetts during that period. Cars from every state in the union were observed with the exception of Idaho, Mississippi and South Dakota. There were also cars from the District of Columbia, seven Canadian Provinces, Porto Rico, Alaska, Canal Zone and three foreign countries, other than Canada. It is estimated that these cars carried nearly four million passengers. The information thus gathered will be valuable to any organization desiring data indicating the section of the country most likely to respond to a publicity campaign setting forth our recreational attractions. A full report is attached. (See Appendix D.)

Tariff on Gypsum

The commission has responded to requests to use its influence with members of congress urging support of measures affecting Massachusetts industries. In one instance the commission was informed of a measure proposed in the senate placing a tariff on gypsum which if it became effective would be exceedingly detrimental to the interest of a company on the Mystic River using that commodity as a raw material. Our state senators were immediately informed of the matter and their assistance requested. The bill did not pass.

Boston Post Office

At the request of the granite workers, the commission dispatched telegrams to every representative of Massachusetts in congress requesting support of a measure providing sufficient increase in the appropriation for the Boston post office to permit of the use of granite in its construction on the grounds of relieving unemployment among the quarry men. Advices from Representative Wigglesworth indicate this message was read in the course of the debate in the house and he expressed disappointment over the "failure of the House to pass legislation necessary to permit all granite construction. Anticipated support from the South did not materialize."

Educational Program

There can be no question but that Massachusetts has inherent qualities and outstanding advantages which render it a desirable location for a great variety of industries, else there could not possibly have grown up, flourished and prospered over the past three centuries man-

ufacturing industries representing 285 types or kinds out of a total of about 330 manufacturing industries listed by the United States government in its reports.

Yet, despite this fact it must be acknowledged this state has been subjected to pessimistic propaganda disparaging in its import and damaging in results, not only to Massachusetts but to New England as a whole. It is encouraging to note, however, that these exaggerated stories of "decadence" are vanishing. A new spirit is abroad in this section of the land which must be fostered, encouraged and strengthened to the end that our present industries may be preserved, even enlarged and new ones developed.

Massachusetts Pamphlet

By way of instituting an educational program designed to inform our own citizenry, as well as people of other states, of some of the pronounced advantages of Massachusetts, the commission prepared and printed a folder setting forth in brief, easily grasped form the outstanding superiorities of Massachusetts in industrial, agricultural and recreational opportunities.

This booklet has had wide distribution over this state especially among the schools, chambers of commerce, hotels, manufacturing concerns, womens' clubs etc. Thousands of copies were also distributed to organizations in most of the other states in the union and to provinces in Canada. All told, about 90,000 copies have been distributed to date out of an edition of 110,000. The booklet was made the subject of much favorable editorial comment by the newspapers of the commonwealth, the general tenor of such comment being one of approval and that it was a "step in the right direction."

The Associated Industries of Massachusetts solicited a supply in order that each member of that organization might have a copy. Some companies were good enough to ask for additional copies in order that their salesmen might have them for distribution in making calls around the country.

A contribution of $1,000 was made towards the cost of a booklet issued by the agricultural departments of the New England states for distribution during this tercentenary year.

Radio Talks

Through the courtesy of radio stations WBZ and WBZA, a series of radio talks was arranged as a further educational feature. These talks were confined to recreation, agriculture, industry, transportation and research as follows:

Date 1930	*Subject*	*Speaker*
Aug. 9	Boston and vicinity	Mr. Bradbury F. Cushing, Chairman, Massachusetts Industrial Commission
Aug. 16	Cape Cod	Mr. Charles H. Brown, President, Massachusetts Hotel Association
Aug. 23	The Berkshires	Mr. J. Tennyson Seller, Manager, Weldon Hotel, Greenfield, Massachusetts
Aug. 30	Tercentenary Commission	Mr. Charles P. Howard, Chairman, Department of Administration and Finance
Sept. 6	Massachusetts Agriculture	Dr. Arthur W. Gilbert, Commissioner Department of Agriculture
Sept. 13	Massachusetts Fairs	Mr. L. B. Boston, Director, Division of Reclamation, Soil Survey and Fairs, Department of Agriculture

Sept. 20	Part Time Farming in Massachusetts	Mr. Daniel J. Curran, Agriculturist, Department of Agriculture
Sept. 27	Recent Developments of the New England Label Program	Mr. Lawrence A. Bevan, Director, Division of Markets, Department of Agriculture
Oct. 4	Massachusetts Foreign Trade Opportunities	Mr. Hugh Butler, New England Manager, Bureau of Foreign and Domestic Commerce
Oct. 11	Industrial Changes in Massachusetts	Mr. Roswell F. Phelps, Director, Division of Statistics, Department of Labor and Industries
Oct. 18	Massachusetts Railroad Facilities	Mr. G. C. Randall, District Manager, Car Service Division, American Railway Association
Oct. 25	Importance of Research to Massachusetts Industries	Dr. Samuel W. Stratton, Chairman, Executive Committee, Massachusetts Institute of Technology

The commission thus publicly expresses its appreciation to the participants for the courtesies and assistance rendered in connection with this program.

Press Notices

Since its inception and up to December 1, 1930, the commission received publicity in newspapers and magazines to the extent of 5,870 inches, such mention being contained in news items, special articles and editorial comments.

Much of this matter was inspired by the commission itself in order that there might be made known as widely as possible, with the means at the commission's disposal, the fact of its creation to serve Massachusetts and the activities in which it was engaged.

Conferences With Shoe Manufacturers

Two conferences with shoe manufacturers of the commonwealth were held, one on July 23, and again on September 24, in order that the commission might become informed regarding the problem of the shoe manufacturers and ascertain if there were possible ways in which the commission might be helpful to the industry, the prosperity of which is of such vital consequence to the commonwealth.

While a considerable portion of the discussion which developed at these meetings was devoted to the favorable effect the new tariff act would have upon the local manufacturer of ladies' shoes and the possibility of a revision thereof by the United States Tariff Commission, it was also brought out that the industry has other vexing problems unrelated to tariff. Among these are:—

First—The desirability of "closer coöperation between all shoe manufacturers and between the various branches of allied trades."

Second—"Improved relations between manufacturers and their workers, especially in the womens' shoe centers."

Third—"Closer study and application of modern merchandising methods."

Fourth—"A sympathetic understanding of each others problems by shoe manufacturers and tanners."

Fifth—"A more serious interest in export methods and possibilities and more general coöperation with government bureaus established to promote foreign trade."

Sixth—"Greater willingness on part of shoe manufacturers and tanners to support their trade organizations."

Seventh—"Better advertising of shoe and leather products."

As a result of these meetings it is planned that the shoe manufacturers are to appoint a committee to coöperate with the commission in matters pertaining to that industry.

Conferences With Tanners

A conference was also held with a group of representatives of the tanning industry as the result of invitations sent to manufacturers throughout the state to attend such a meeting on October 2. Governor Allen honored the conference with his presence and made helpful remarks pertinent to the occasion.

Among the nettlesome problems of the industry brought out in the course of the discussions of the conference were the labor laws of the commonwealth, especially the 48-hour law for women employees; freight rates on rail borne coal to certain communities in the commonwealth; small orders for novelty goods, quantities being insufficient to permit of profitable manufacture; lack of standardization of colors; lack of coöperation in the industry and the great fluctuations in the cost of raw materials.

As a result of the conference there has been appointed a representative body of tanners to serve as a committee to coöperate with the commission in matters pertaining to the industry.

Associated Industries Industrial Exposition

The commission endeavored to assist in furthering the industrial exposition sponsored by the Associated Industries of Massachusetts by addressing letters to several hundred manufacturers in the commonwealth in an effort to elicit their coöperation in the belief that it would be beneficial to our industries to thus display their wares at a time when so many visitors were in our midst.

The manufacturers of wooden boxes have solicited a conference with the commission in order that it might assist, if possible, in the solution of the problems confronting that industry. This meeting is on the program for the near future.

Miscellaneous

The commission has answered various inquiries during the year from prospective tourists, requesting information about routes, camps, game laws, etc. Conferences have been held with various organizations, chambers of commerce and trade groups regarding taxation and other matters, and with the officials and representative business men of two of our cities regarding problems with which they were confronted.

As a result of its industrial survey, the commission became informed of deposits of raw materials suitable for the manufacture of a certain article and instituted negotiations with a prospect for their utilization, which endeavor however, due somewhat to present depressed conditions, has not yet reached fruition although the project is still a live one. Tangible results are hoped for with an improvement in business conditions.

Exhibit of Governmental Activities

The commission participated in the exhibition of governmental activities of the commonwealth held in Commonwealth Armory, and at the Eastern States Exposition, occupying space in connection with the department. Thousands of the commission's booklet on Massachusetts were given out during the period of the exhibit and answers given to numerous inquiries regarding the commission's organization and its work. Later on the exhibition cases were requested for display by one of the metropolitan banks in its banking rooms.

Legislative Proposals Favored

The commission appeared before legislative committees in advocacy of legislation permitting towns and cities to expend public money for advertising purposes, also in support of certain bills designed to assist cities and towns in their efforts to further the work of controlling the mosquito pest. It is the opinion of the commission that the elimination of, or control of, the mosquito will effect a wonderful stimulation of the recreational business and greatly enhance the property values in certain sections now handicapped by the existence of that pesky pest.

Assistance Rendered

Speakers have been supplied on various occasions and the executive secretary has spoken to chambers of commerce and service clubs at times during the year.

The assistance of the commission has been sought in securing additional capital for the conduct of a business, also in supplying information regarding plants available for occupancy by a company desiring more space for its business. Articles have been furnished to publications desiring contributions about Massachusetts, and pictures of industrial and historical scenes supplied to a publisher about to issue a new geography.

Association Meetings

In order to keep informed of developments taking place in the industrial development field, the commission has been represented at meetings of the United States chamber of commerce at Washington and of the industrial section of the National Association of Real Estate Boards at Detroit and of the New England Council, also at the quarterly meetings of the New England Association of Commercial Executives.

Industrial Development

The Massachusetts industrial commission was established as an official body to promote industry, agriculture and recreation. The greatest of these is industry—manufacturing industry. By it is created over ninety per cent of our annual increment of wealth. The vast majority of our citizens are dependent upon the prosperity of our industries for their well being.

Despite this self-evident fact the cotton textile industry in the commonwealth has been passing through a very trying period during the past few years for reasons largely due to world wide economic conditions beyond its control and to the rigors of which very many of our mills have had to succumb.

Thousands of mill workers have thus been thrown out of employment and are either idle or have found other employment. There are, therefore, available for other kinds of manufacturing some very excellent buildings readily adaptable to other industry, and available for employment therein are those people formerly engaged in the business which for one reason or another has been closed out.

Every possible effort should be made to secure new industries from without the commonwealth or to create by our own efforts, new industries from within to replace those which for various reasons cease to exist. To induce industries to change location is not an easy matter. Nevertheless, Massachusetts should exert itself to place before the country the advantages it possesses for industry in available sites, skilled labor, good transportation, good roads, superior educational facilities, good markets, ample financial resources, cheap power etc.

Massachusetts has something real to sell. It is inconceivable that manufacturing establishments within our borders could have grown to

upward of 10,000 in number if there did not obtain here the conditions conducive to the prosperity of almost every conceivable kind of manufacturing enterprise.

Competition between states and among municipalities of various sections of the country for new industries is becoming keener year by year. Full page advertisements appear not only in national magazines but in some of our trade papers, circulated largely in New England soliciting the removal of specific industries from this section to other locations wherein, it is alleged, there are more alluring possibilities.

There can be no question but that advertising is the great sales force of modern times. Those sections and those cities of the United States which have been generous in the use of publicity seem to have made the greatest gains in population during the last decade.

While Massachusetts gained 10.3 per cent in population from 1920 to 1930, the average gain for the United States was 16.1 per cent.

Of the cities over 100,000 it is significant that those showing remarkable gains in population are those which have done national advertising.

Notable among these are the following:

Miami, Fla.	273.7%	Tulsa. Okla.	96.0%
Longbeach, Cal.	154.6%	Dallas, Texas	63.8%
Los Angeles, Cal.	113.9%	Atlanta (borough) Ga.	34.8%
Houston, Texas	109.4%	Louisville, Ky.	31.0%
Chattanooga, Tenn.	106.5%	San Francisco, Cal.	25.8%
Oklahoma City, Okla.	103.1%	Kansas City, Mo.	23.1%

Against these may be noted the following gains in Massachusetts cities:

Springfield	15.6%	Boston	5.2%
Somerville	11.3%	Cambridge	3.6%
Worcester	9.5%	Lynn	3.2%

Credit must be given those cities of our state which are, so far as available funds make it possible, working hard for progress. The bill passed at the last session of the legislature permitting cities and towns under certain restrictions to expend public funds for publicity purposes should give impetus to the community development movements.

The commission feels that in order to be of greatest service to the commonwealth, it should be granted authority to use modern and up-to-date means of disseminating information about the resources and advantages of Massachusetts, in other words, advertise — using newspaper and magazine space for that purpose. Some of our sister states are pursuing such a course with good results, notably Maine. According to a survey made by the United States chamber of commerce an ever-increasing sum is being devoted to municipal and state advertising, financed by taxes. In a study covering approximately 150 communities, the following tabulation covers the expenditures since 1924.

1924	$1,702,191
1925	2,351,824
1926	3,658,883
1927	4,438,318
1928	4,519,358
1929	5,136,036

In the face of this evidence of aggressiveness on the part of competing sections, can Massachusetts grow and prosper in proper measure by maintaining an attitude of silence? Is it not time we fought fire with

fire? There is no reason why our light should remain hidden under a bushel when competition between states for new industries is becoming keener year by year.

The number and variety of our manufacturing establishments bears testimony to the inherent advantages of Massachusetts. Yet there is a tendency for certain industries to seek other sections to better grow and prosper. The operation of economic law cannot be stopped. An energetic advertising program, however, would be fruitful in attracting new industries which an economic survey, now under way would show, might prosper here by using our abundance of skilled labor, and by taking advantage of the other attributes we have adaptable to their needs. New products, the results of invention and research appear with striking rapidity in this age, and it would seem should be attracted to Massachusetts as the best place adapted to their manufacture.

With the conviction that Massachusetts should resort to publicity the commission has introduced a bill seeking amendment of chapter 357, broadening the powers of the commission to the end that it may be authorized to contract for space in periodicals to advertise the commonwealth.

Appendix A.

REPORT OF CONNECTICUT VALLEY SURVEY
BY THE
MASSACHUSETTS DEPARTMENT OF AGRICULTURE
FOR THE
MASSACHUSETTS INDUSTRIAL COMMISSION
1929—1930

Time of Survey:

November 1929 to March 1930.

Purpose of Survey:

First—To find out which type of farming now practised in the Connecticut Valley is most profitable and why.

Second—To ascertain what changes, if any, are taking place within this area.

Third—To gather specific information relative to onion production, market practices and consumer demands.

Coöperating Parties:

Sponsored by the Massachusetts Industrial Commission.

Directed by the Massachusetts Department of Agriculture.

Tabulations summarized by the Massachusetts Agricultural College.

Methods of Procedure:

First—The designing of a suitable questionnaire blank.

Second—The employment of ten agriculturally trained men for the taking of farm records.

Third—Designation of the area and charting of farms.

Fourth—Checking returns daily.

Fifth—Tabulating complete records.

Sixth—Survey of consumer demand in Boston—Worcester and Springfield.

Area Affected:

347 farm records were taken within the towns of Deerfield, Montague, Sunderland, Whately, Hatfield and Hadley. This area produces approximately 90% of all onions grown in Massachusetts and 75% of all tobacco.

Results of Farm Records:

First—33% of the farmers within the above area made no labor income in 1929.

Second—the highest labor incomes were made on farms combining tobacco, vegetables and onions.

Third—Volume of business, as well as diversity, had a direct bearing on the amount of labor income.

Fourth—For the most part onion growing appeared to be a deterring factor in amount of labor income.

Fifth—Dairying combined with vegetable and tobacco growing appears to be, for the present, a reasonably safe farm program.

Sixth—There is a slight decrease in onion acreage during the past few years and a decided change from seed onions to set onions, with some farms replacing onions with vegetable crops, potatoes or dairy cows and a slight tendency to increased tobacco acreage.

Seventh—"We would buy local onions direct from the grower if it were possible to depend on a uniform grade—quality and size", sums up a study of the trade demands in Worcester, Springfield and Boston.

Eighth—16,622,600 pounds of onions were purchased last year by the buyers interviewed in these three cities of which but 3,810,000 pounds were Connecticut Valley onions.

Ninth—Approximately 50% of all onions used in Massachusetts come from the western states.

Tenth—Reason for the above is mainly due to lack of proper grading and poor quality, for 25% of the buyers interviewed said they would return buying Connecticut Valley onions if the grades were improved.

Eleventh—Buyers claim they can not depend on Connecticut Valley onions—that they can more easily depend on western packs—that the faults generally with local onions are loose skins, softness, tendency to sprout, varying degree of maturity, small, uneven size, thick necks, poor keeping qualities, decayed, rot, wet and dirty onions. Flavor well spoken of for the most part and but little complaint as to strongness.

Recommendations:

In view of the above it would appear that Connecticut Valley farmers should begin merchandising their onions—

1. By re-establishing public confidence in—
   - A. More careful grading
   - B. Selling only the highest quality product.
   - C. Possibly in marketing coöperatively.

Appendix B.

INQUIRY RELATIVE TO INDUSTRIAL DEVELOPMENT TO BE ANSWERED AS SOON AS POSSIBLE AND RETURNED TO THE MASSACHUSETTS INDUSTRIAL COMMISSION, 482 STATE HOUSE, BOSTON, MASS.

Name of City or Town

Tax Rate.

Water Rates. Available supply for industrial purposes.

Name of company supplying power and gas.

Total amount of floor space unoccupied available for industrial purposes.

Size of largest single unit of floor space available and type of building, also state if water power is available.

What manufacturing has been undertaken and abandoned and why abandoned?

Available supply of labor,—male, female, skilled, unskilled. Nationalities, —which predominate.

Along what lines are present development efforts being directed?

List raw material and unused by-products available in your community.

Have you any arrangement to assist new industries that might desire to locate in your community?

List kinds of industry for which there are special openings or opportunities and give reasons.

Type of industry needed to balance local industry.

Send copies of any printed material such as booklets or surveys which may be available regarding conditions in your community.

Signed———————————————

Address———————————————

City or Town———————————————

Date———————————————

Summary of the Inquiry Relative to Industrial Development

The replies to the inquiries relative to industrial development recently sent to all cities and towns in the commonwealth by the Massachusetts industrial commission have been received from all but a few places and disclose many interesting facts.

This survey is the first of its kind ever conducted in the commonwealth and was made so that the commission might have on file pertinent information such as the amount of floor space available in each community and the size of units, supply of labor available, kinds of manufacturing undertaken and abandoned, kinds of raw materials or unused by-products available, kinds of industry for which there are opportunities, attitude of the community towards industrial development and existing arrangements to assist prospective industries that might desire to locate.

According to replies received there is available in many communities desirable floor space for manufacturing purposes in units ranging from 1,000 square feet to 4,000,000 square feet. Much of this floor space is in modern factory buildings of brick construction from one to five stories with power plants, elevators and up-to-date in every respect. In most cases there is a plentiful supply of water at reasonable rates for manufacturing purposes and in some instances plants are available with valuable water rights. The labor supply is ample to permit new industries to be properly cared for in this respect and is skilled in various lines.

Among the raw materials and unused by-products available are lime, limestone, standing timber, hard and soft woods, lumber, pine, oak, hemlock, birch, lumber for small woodworking industries, sawdust, shavings, cord wood, clay, China clay, clay for bricks, sand, gravel, stone, stone for crushing purposes, bluestone, granite, peat, manganese, by-products from asbestos, natural ice, hay, fish, waste from fish industries, rags, waste from paper factories, scrap iron, scrap metals, coke, waste from rubber factories, waste from woolen mills, wool grease and waste from leather industries.

In considering the industries for which there are special openings or opportunities, it is evident from the replies received that much thought was given to diversification and the right combination of industries in a community to balance seasonal industries already located and to balance the labor situation where industries already located employ mostly men or women.

There appears to be opportunity for the following lines of industry in various communities:—boots, shoes and leather products, gloves, pocketbooks, traveling bags, leather novelties, cotton, woolen and silk textiles, rayon, hosiery, garment industries, clothing, silk and art silk products, shirt manufacturing, small toys, woodworking industries, wood box shops, matches, barrel manufacturing, reed, truck bodies, boats, yachts, radio cabinets, machine tool industry, machinery manufacturing of all kinds, drop forging, automobile accessories, safes, vaults, window frames, metal doors, electric domestic appliances, foils, typewriters and supplies, foundry and roofing materials, iron and steel mills, airplanes, airplane parts, glass containers, bottles, glass tubes used in incandescent lights, cement, celluloid, paper, newspaper, paper boxes, wall paper, printing, publishing,

paper bags, button industry, sporting goods, hats, jewelry, slipper factory, chemicals, fishing, farming, vegetable canning, dairy products, ice cream plants, food products, nurseries, stone crushing concerns, granite quarry development, porcelain makers and industries that require waterfront.

There are a variety of set-ups in the various communities for the purpose of industrial development. In most cases the chamber of commerce, board of trade, service clubs or similar organizations are the guiding influence while in others city officials, selectmen or enterprise or development committees appointed by them attend to the matter, also, in some instances planning boards, citizens committees, banking and public utility interests are the active bodies. Where these groups are organized for the purpose, they state their aim is to encourage existing industry to expand and assist in locating new industries. The inquiry revealed, however, that about 200 of the 355 communities in the commonwealth have no organized body to head up an industrial development program and assist in establishing new industries.

One city reports a development fund of $1,000,000 which provides a revolving fund. Another reports the successful use of industrial "tip cards" which are given general circulation among its members and others, and the entire community urged to notify the proper party of possible prospects.

Several chambers of commerce have men devoting all of their time to this type of service that among other things furnishes prospective new industries with statistical and other information, lists of sites and locations, miscellaneous information on labor, markets, transportation, living conditions, taxes, manufacturing facilities etc., also provides financial contacts in some cases and assistance and advice to inventors. To existing industry they offer information on new markets, promotional work in foreign trade, assistance in locating new sites for expansion, help in removing unfair restrictions, coöperative work with trade groups, utilities, real estate dealers and local organizations.

Many communities report that they are not interested in industries of the nuisance type that have a harmful effect on sections in which they are located, also, that while they will do everything possible for real propositions they will not encourage industries that require the payment of moving expenses, bonuses or stock subscriptions. Seventeen of the communities reporting were directing all their efforts towards development along residential rather than industrial lines.

The commission is now planning to make personal contacts with the groups interested in industrial development throughout the state bringing the service of the Massachusetts industrial commission to them. Experts in the industrial development field are coöperating with the commission in the plan to assist communities interested in industrial development to proceed along sound lines and profit by their knowledge gained through experience and thus avoid some of the mistakes that have been made by over-anxious communities.

EXCERPTS FROM A PAPER ENTITLED "WHAT HAPPENS TO THE INDUSTRIES YOU BUY" WRITTEN BY FRED W. SEAVEY, SECRETARY OF THE LYNN CHAMBER OF COMMERCE, AND READ AT A MEETING OF THE NEW ENGLAND COMMERCIAL ORGANIZATION OF SECRETARIES AT CONCORD, NEW HAMPSHIRE ON JUNE 28, 1930.

In opening the subject, Mr. Seavey says that the paper is a compilation of the experience of New England communities in granting unreasonable concessions to roaming industries. The excuse for its preparation was the need for concrete examples of these economic tragedies which could be passed on to smaller communities with a warning to go slow when approached by industrial tramps. The information also should help

secretaries to maintain the only safe and sane policy which any commercial organization can follow and continue to be successful, of refusing to consider any bonus, special inducement or financial assistance of any kind in connection with the establishment of new industries in their communities.

What Constitutes a Bonus or Special Inducement?

It has been defined by the special committee on inter-community competition for new industries of the United States chamber as "any measure of assistance (other than that which is purely professional or technical) given to secure the location of a new industry which would not be extended were the industry to locate in some other community." Included in the list is:

(a) Moving expense.
(b) Donation of a factory site.
(c) Giving of a factory building to an industry based on a certain amount of payroll.
(d) Endorsement of or assistance in selling stocks or other securities.
(e) Abatement of taxes for a period of years.
(f) Lending of money to an industry to an extent which would not be considered good banking.
(g) Use of the influence of the chamber of commerce to extend, without cost to the industry, public utility service such as water, sewers, gas and electric connections, street paving etc., any of which things would not be done for the industry without cost, except through and by the influence of the chamber.

Following are some of the experiences related to Mr. Seavey by communities concerning industries which were induced to move by the giving of some form of bonus.

A large shoe factory employing 700 people recently was induced to move to another community for a consideration of approximately $12,000. The company was rated for $500,000. Today the company is in poor financial shape. The reason: No shoe workers in the community who could make their shoes. They learned too late and could not get out of their deal before they lost practically all they had invested. So did the community because the people who had jobs and left them to work at this factory also lost.

Another reports: "In two recent instances we have had lessons in the fallacy of lending financial support to weak-kneed new industries. However, in neither of these instances did the chamber advocate such financial support, but in both the chamber had some responsibility for bringing the industry into the community. Bankers and capitalists, exercising their own judgment, lost to the extent of between fifty and one hundred thousand dollars. Both concerns became bankrupt and faded out of the picture. The net result: No gain in industries; a loss to the community of a substantial amount of money; the operations of the chamber, so far as it had any responsibility, a detriment.

"As in many another case, no doubt, this chamber was more or less unconsciously influenced by the constant demand of its members for new industries in the community. Doubtless every minute that was spent upon these worse than useless projects by the Chamber's Industrial Bureau could have been used to advantage in promoting the expansion of existing industries.

"Our present policy for the guidance of our industrial bureau is that three-fourths of its efforts shall be devoted to service to existing industries and one-fourth to the acquisition of new industries and that new industries requiring financial assistance shall be given consideration only when the project is of such character that it may be financed through legitimate banking channels."

Another reports: "An artificial leather concern borrowed on notes at 8% interest. I personally sold about $4,000. In two years time the notes being partly paid this firm failed. Those holding the notes lost about half their investment. The firm, however, was re-established and is now manufacturing apparently on a sound financial basis.

"Previous to ten years ago many manufacturers were paid to move to our town. Most of these proved of little advantage; some did business for a year or two and moved away. A few proved to be of decided disadvantages. One of these doing business in a large building had several fires, the underwriters refused to carry any risks in the building and they were asked to move. Another town nearby paid their moving expenses. Within a few weeks of their moving to the town, the building in which they were established burned and with it a large lumber yard adjoining and other property.

"As a result of many firms being paid to move to our town one only now remains. This, however, is doing a good business, at present employing about 150 hands and apparently has made money.

"Our directors have established a firm policy of paying no one to move to our town. We think our advantages are sufficient inducement."

Another reports: "About one year ago we sold $300,000 worth of stock locally to purchase a local factory that was forced out of business due to causes entirely outside the control of the local management. This effort has put into circulation a $3,000 a week payroll and the first annual report showed that the company had made money—something equivalent to a 5% dividend."

Another reports that within the past two years local capital has been secured to the extent of about $13,000 for a new invention on a metal screen. This concern has not been successful. It is still operating but at the present time is employing but three people and appears now to be in a very highly speculative condition.

Another city which has a remarkable record for industrial development reports that while their proposition was not in the form of a bonus, it, of course, held some inducement. A corporation within the chamber simply offered to finance and build plants, according to the specifications of desirable prospects, selling the plants, when completed, to the prospect at cost, charging 5% on the actual investment and allowing the prospect to retire the principal at 10% per year. They erected thirteen plants on this basis.

They had an iron-clad rule that any manufacturer coming in must stand on his own feet financially. Then came along a company with a proposition that looked good to the citizens. The chamber after many conferences, decided to endorse or sponsor the sale of a considerable amount of this firm's stock. After the stock had been sold and a considerable amount of money collected, the firm went into the hands of receivers and later the plant was sold at auction for $32,000 with liabilities of $450,000. The stockholders, who purchased the stock in good faith, lost a tremendous amount; many of these widows who invested their insurance and people of moderate means who invested all of their savings.

Another secretary writes: "If a concern can show a satisfactory balance sheet, it will have no difficulty under ordinary conditions in securing financing from local banks; therefore, in this case, there is no need for the community to finance it. Secondly a concern which cannot show such a sheet and is willing to sell its integrity for a few thousand dollars is certainly not the type of industry which the average community wants.

"We here stand on the basis that we are very glad to welcome young, husky industries, but we have no intention of attempting to revive dying organizations and thus become the graveyard of industry instead of its birthplace."

Another reports that two concerns were induced by a real estate agent to leave his city and move to towns outside of Massachusetts. The real estate agent specializes in locating industries for small communities on a 10% commission basis. His method is to find a firm that is a little dissatisfied with conditions and to offer to obtain bonuses and special inducements for 10% of the amount they receive. He then visits the smaller communities and sells them the idea of putting up the amount of bonus that the concern demands.

Just a few words on the other side. One man reports that while the statement that it is dangerous to offer bonuses as an inducement is generally true, "We all have seen examples of various cities granting bonuses to corporations and these corporations later becoming very large, very rich and strong in the city and contributing much to the municipality which gifts of payrolls, purchases, taxes, etc., would never have come but for the original bonus.

"Our chamber of commerce has either directly or indirectly brought into this territory ten industries and warehouses during the last two years; the majority of these came without any solicitation other than a straight presentation of the facts which we believe would show them that they could operate successfully in this territory. One of them, two years ago, was given the first month's free rent by the chamber, a small matter indeed. The other which we aided materially in coming to our city was given free land (15 acres) and we constructed a railroad siding which was run to the center of their land from the nearby main line. This venture cost us a total of quite a sum of money yet we feel that it was well worth it from the point of view of payrolls, taxes, profits, etc., local contractors, real estate dealers and the city in general not to mention a large amount of current which they are using. It is quite likely that another corporation with the same money back of it will locate in our city in the near future as a consequence without the expenditures on our part."

Another reports: "There are, however, two bright spots where local capital did secure good sizable, permanent payrolls. Some sixteen years ago local capital built a mill for a silk velvet company which is still operating and until the recent depression gave an average weekly payroll of $15,000 during the entire time of its local existence. The other bright spot, one with which I am more familiar was the taking over of an abandoned cotton mill built in 1829 and containing over 100,000 square feet. This factory had very valuable water power which was purchased, together with the buildings, by our local power company in order to secure additional production of electricity. The company had no use for the buildings and they offered a special inducement to another silk concern to take over two of the three mill buildings containing over 100,000 square feet, giving the company ten years free rental. In addition to this, business men of our city agreed to pay part of the moving expenses in the sum of $3,000 and also to give $1,000 each year for five years towards the heating expenses of the buildings. To date $6,000 has been paid to this company which located here in November, 1929. Today the company has bought the two buildings at a very low figure and is at present giving our city a weekly payroll of $10,000. They have been operating day and night shifts practically the entire time that they have been here and have invested in new machinery to the extent of $300,000 approximately."

Another chamber of commerce reports that a concern which lost its plant in a neighboring town through fire was induced to move to their city. They needed only $5,000 and this amount was subscribed by accepting two year notes at 6%. This small issue was recommended by our local bank which held mortgages on the vacant property into which it moved. These notes have all been met as agreed and are practically absorbed.

Mr. Seavey suggests in his conclusion that a committee be appointed to

draw up some common sense rules which might be considered a safe and sane policy which could be recommended to communities to guide them in handling industrial prospects.

Appendix C

MASSACHUSETTS INDUSTRIAL COMMISSION RECREATIONAL SURVEY

The total investment in residential and non-residential property used for seasonal recreational purposes in Massachusetts is $190,000,000, from which the cities and towns receive $4,970,000 annually in the form of taxes.

These figures are based on returns made to the Massachusetts industrial commission by the local assessors, and are the result of a survey made in coöperation with the New England Council.

The data for 352 out of the 355 cities and towns in the commonwealth are:

Valuation of recreational property, including only real estate which is taxed, owned by non-residents who are residents of other communities in Massachusetts	$115,218,711	
Taxes paid thereon		$2,991,197.46
Valuation of similar property owned by non-residents of Massachusetts	38,209,726	
Taxes paid thereon		975,067.94
Valuation of non-residential property used for seasonal recreational purposes, such as summer hotels, golf courses, boys' and girls' summer camps, roadside camps and cottages, etc.	35,930,743	
Taxes paid thereon		1,000,623.99
	$189,359,180	$4,966,889.39

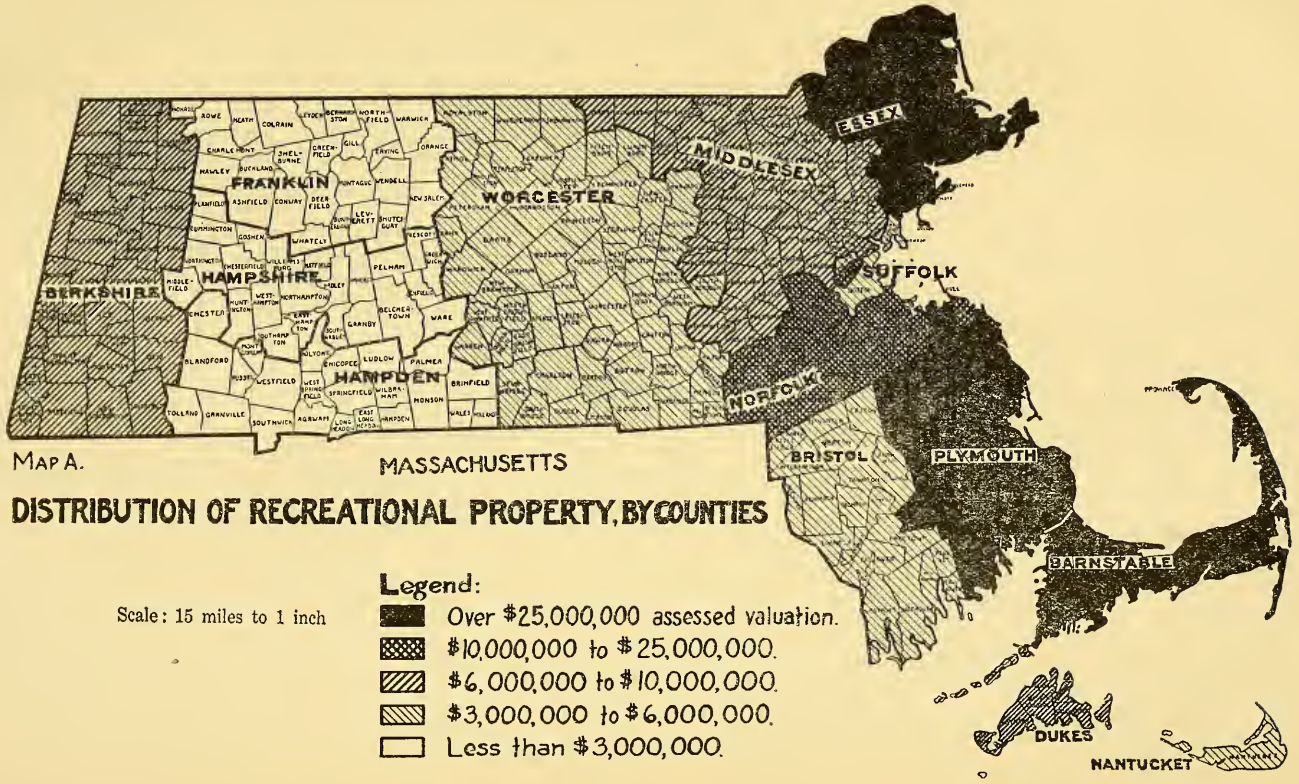
The recreational property of the state makes up slightly over three per cent of the total assessed valuation of real estate on the basis of the 1929 figure of $6,292,963,588, and the taxes levied on this type of property amount to 2.74 per cent of the total tax on real estate.

This percentage appears to be small in relation to the whole, but it should be remembered that Massachusetts is primarily an industrial state. However, certain sections of the state depend to a very large extent on seasonal property for a livelihood, and in three sections—Cape Cod, Martha's Vineyard, and Nantucket—recreation is the "leading industry". In Martha's Vineyard, that is, Dukes county, seasonal property makes up 55.5 per cent of the total assessed valuation of real estate, and accounts for 61.5 per cent of the property taxes. Cape Cod, or Barnstable county, is made up of recreational property to the extent of 54.0 per cent, upon which 53.5 per cent of the local taxes are levied. Nantucket county is 48.6 per cent recreational, and receives the same proportion of its real estate tax income from this type of property.

Considering the quantitative importance of recreation in the various counties, there are three in the state which are distinctly outstanding:

Essex county leads with recreational property assessed at $48,028,825. This is made up to a great extent of large summer estates along the North Shore. However, because of the industrial development of the county, this investment in seasonal property makes up only 8.1 per cent of the total assessed valuation of real estate.

Following this comes Plymouth county with $44,246,506 invested in recreational property in 26 of the 27 cities and towns, and Barnstable county or Cape Cod, with $42,015,555 of this type of property.



MAP A.

MASSACHUSETTS

DISTRIBUTION OF RECREATIONAL PROPERTY, BY COUNTIES

Scale: 15 miles to 1 inch

Legend:

- Over $25,000,000 assessed valuation.
- $10,000,000 to $25,000,000.
- $6,000,000 to $10,000,000.
- $3,000,000 to $6,000,000.
- Less than $3,000,000.

From these large figures there is a drop to $10,241,574 for Norfolk county, which takes fourth place. Then follows in order Dukes, Berkshire, Middlesex, Worcester, Bristol, Nantucket, Suffolk, Hampden, Hampshire and Franklin counties. This tendency for recreational property to hug the shore is brought out in Map A, showing the distribution by counties.

The greater popularity of the shore as a recreation spot, in preference to the hills, the lakes or the country, is shown by a study of seasonal property in the towns. There are eight towns with recreational property assessed at more than $5,000,000. All eight are on the shore. Thirty towns have property of this nature assessed at between one and five million dollars each. All but two of these are on the shore.

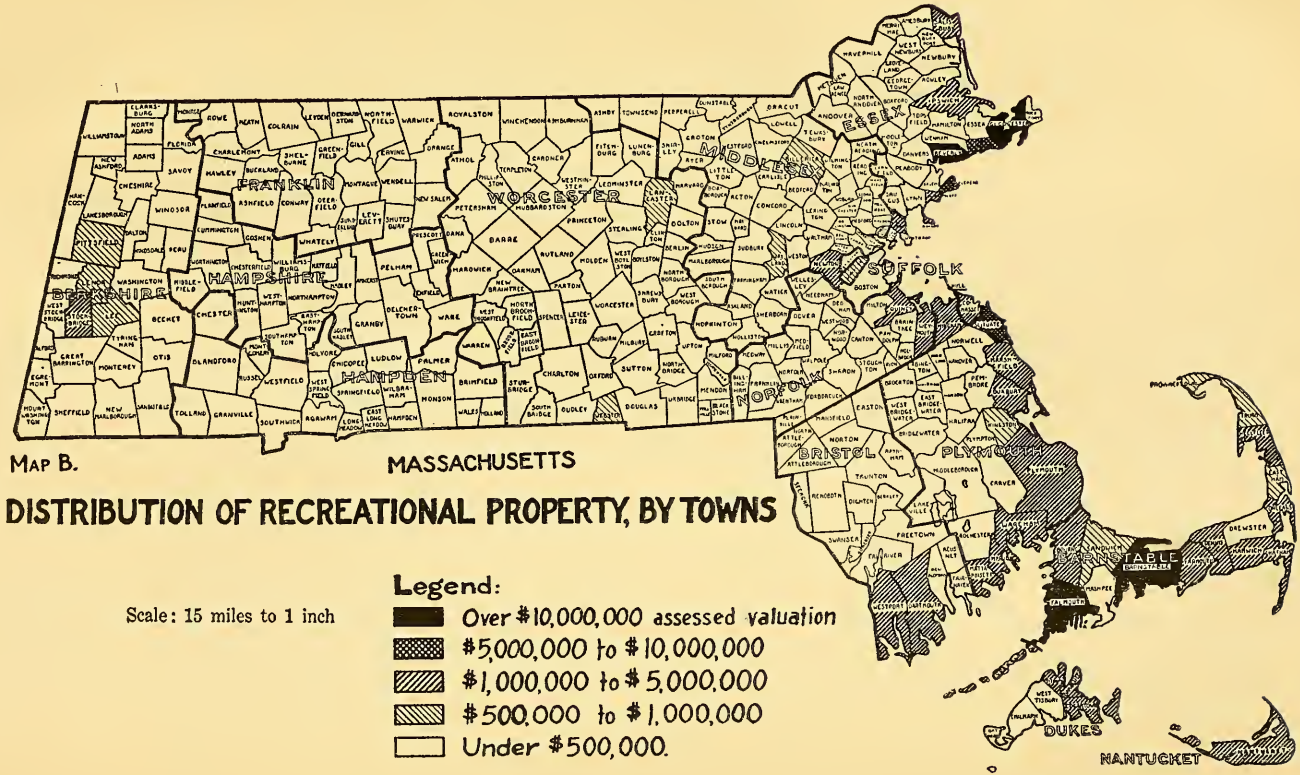
This situation is shown graphically in Map B, which portrays the distribution by towns. It is seen that there is only a scattering of recreational facilities away from the shore. The greatest minor concentration is in the Berkshires, where Lee, Lenox, Pittsfield and Stockbridge each have over one-half a million dollars invested in this type of property. Other scattered inland towns of importance in this respect are Billerica, Brookline, Newton, Wayland and Webster.

The banner city in recreation is Beverly, where there is seasonal property assessed at $12,105,315. This is followed by Barnstable which includes Hyannis, where there is $11,629,580 of such property. Falmouth, Hull and Gloucester follow in the order named, each having more than $10,000,000 invested in recreational property. Towns having seasonal property assessed at between five and ten million dollars are Manchester, Marblehead and Scituate.

Considering the distribution by towns in terms of percentage of total valuation, to determine the relative importance of recreation in the town, it is found that Gosnold tops all others with 96 per cent of its property devoted to seasonal purposes. Gosnold consists of that chain of islands extending southwest from Woods Hole separating Vineyard Sound from Buzzards Bay. This is closely followed by Oak Bluffs, also in Dukes county with 95.2 per cent. Then follows Eastham with 85.8 per cent; Dennis with 84.3 per cent; Scituate with 72.0 per cent; Wellfleet with 71.5 per cent; Manchester with 69.2 per cent; Hull with 65.0 per cent; Truro with 61.5 per cent; Sandisfield with 61.1 per cent; Barnstable with 60.8 per cent and Salisbury with 60.5 per cent. Ten others have between 50 and 60 per cent of their total valuation in recreational property. All but one of the leading towns by percentage named above are on the shore.

With regard to the popularity of certain towns with out-of-state people, the tabulation shows that eleven towns each have recreational property assessed in excess of $1,000,000, owned by residents of other states. Barnstable, which includes Hyannis, leads with $4,382,610, and is closely followed by Gloucester with $4,009,650. Falmouth has $3,417,185 invested in this class of recreational property. The eight towns with between one and three million in this class are in order of importance—Beverly, Stockbridge, Manchester, Nantucket, Harwich, Dartmouth, Tisbury and Oak Bluffs.

From the foregoing it is evident that there are great possibilities for further development in recreation in the inland portions of the state, particularly in the Berkshires. The scenery in that region is among the best in New England, yet it is not made available to vacationists to anywhere near the same extent which prevails in the shore resorts. Some say that shore property is overdeveloped. No one can deny that the Berkshires are underdeveloped from a recreational point of view. The success of the White Mountains, the Catskills and the Adirondacks as vacation resorts proves the popularity of the mountains. The Berkshires are equally as beautiful, and can easily be developed to be more appealing to the tourist and vacationist.



MAP B. MASSACHUSETTS

DISTRIBUTION OF RECREATIONAL PROPERTY, BY TOWNS

Appendix D

Massachusetts Industrial Commission

Out-Of-State Cars Entering Massachusetts

Over a million and a quarter out-of-state automobiles carrying nearly four million passengers entered Massachusetts during July and August, according to an estimate made by the Massachusetts industrial commission on the basis of a state-wide road survey.

Enumerators stationed on the principal highways at the borders of the state observed cars from forty-five states, the District of Columbia, seven Canadian Provinces, Porto Rico, Alaska, Canal Zone and three foreign countries other than Canada. The three states which were not represented in the check-up were Idaho, Mississippi and South Dakota.

Rhode Island stood highest in the list with 492,797 estimated car entries. Cape Cod and the section of the Massachusetts shore bordering on Buzzards Bay is particularly popular with Rhode Islanders. The road count showed that on a Sunday in August, 5093 Rhode Island cars crossed the line on the road from Providence to Fall River and the Cape (United States, Route 6) making up about 70 per cent of the total incoming traffic on that road. On the following Tuesday, a normal day, 2409 Rhode Island cars entered Massachusetts over the same road making up nearly 64 per cent of the total.

The first ten states included, besides Rhode Island, Connecticut, with 243,484 estimated car entries; New York 230,434; New Hampshire 114,866; New Jersey 45,260; Vermont 37,334; Pennsylvania 24,366; Maine 19,799; Michigan 8,835 and Ohio 8,670. Complete data for each state is presented in Table I in alphabetical order.

A total of 1,270,999 cars from other states and Canada entered Massachusetts during the two month period, according to the estimate. Of these, 1,265,211 were from other states and 5,788 were from Canada. Assuming three passengers per car gives 3,812,997 as the total number of visitors.

Considering out-of-state car entries by principal highways we find that United States route 6, from Providence to Fall River and the Cape is by far the busiest gateway to the state with an average of 4,040 cars from other states entering daily. Of course, most of the cars entering the state at any point are registered in the contiguous state. This is equally true in this case.

Next in order was United States Route 1, at the Rhode Island line with a daily average of 2,523 out-of-state cars entering.

Observers stationed just over the line in New Hampshire at the far side of road junction United States 1, and state route 110 reported a daily average of 1,264 cars from other states, placing this third in order of importance.

Other gateways with a daily average of cars from other states in excess of 1,000 are route 138, Fall River to Newport, 1241; United States route 7, Williamstown to Pownall, Vermont, 1139; and United States route 5, Hartford to Springfield (east side) 1060. Detailed averages for all the principal gateways are given in Table II.

Table I.—Estimated Number of Out-of-State Automobiles Entering Massachusetts during July and August, 1930.

State	Estimated No. of cars visiting	Estimated no. of visitors (3 per car)	State	Estimated Number of cars visiting	Estimated no. of visitors (3 per car)
Alabama	186	558	New Jersey	45,260	135,780
Arizona	176	528	New Mexico	52	156
Arkansas	42	126	New York	230,434	691,302
California	2,770	8,310	North Carolina	1,116	3,348
Colorado	269	807	North Dakota	62	186
Connecticut	243,484	730,452	Ohio	8,670	26,010
Delaware	1,085	3,255	Oklahoma	186	558
District of Columbia	5,642	16,926	Oregon	217	651
Florida	3,266	9,798	Pennsylvania	24,366	73,098
Georgia	352	1,056	Rhode Island	492,797	1,478,391
Idaho	–	–	South Carolina	527	1,581
Illinois	7,048	21,144	South Dakota	–	–
Indiana	2,821	8,463	Tennessee	744	2,232
Iowa	455	1,365	Texas	1,023	3,069
Kansas	320	960	Utah	52	156
Kentucky	165	495	Vermont	37,334	112,002
Louisiana	83	249	Virginia	2,635	7,905
Maine	19,799	59,397	Washington	93	279
Maryland	4,382	13,146	West Virginia	589	1,767
Michigan	8,835	26,505	Wisconsin	992	2,976
Minnesota	558	1,674	Wyoming	83	249
Mississippi	–	–	U. S. Total	1,265,211	3,795,633
Missouri	806	2,418			
Montana	176	528	New Brunswick	548	1,644
Nebraska	300	900	Nova Scotia	269	807
Nevada	93	279	Ontario	1,840	5,520
New Hampshire	114,866	344,598	Quebec	2,883	8,649
			Other Canadian	248	744
				1,270,999	3,812,997

Table II.—Daily Averages of Automobiles from other States in United States entering Massachusetts, during July and August by Principal Gateways (1930)

Route No.	Daily Average of cars from other states	Between	And
2	33	Williamstown	Albany, N. Y.
U.S. 20	998	Pittsfield	Albany, N. Y.
17	520	Great Barrington	Hudson, N. Y.
U.S. 7	461	Great Barrington	Canaan, Conn.
8	104	New Boston	Torrington, Conn.
10	938	Westfield	Farmington, Conn.
5A	742	Springfield	Hartford (W. Side), Conn.
U.S. 5	1060	Springfield	Hartford (E. Side), Conn.
32A	46	Palmer	Stafford Springs, Conn.
124	234	Sturbridge	Union, Conn.
131	58	Southbridge	Quinebaug, Conn.
12	384	Webster	Putnam, Conn.
122	548	Worcester	Woonsocket, R. I.
142	310	Wrentham	Woonsocket, R. I.
U.S. 1	2523	Boston	Providence, R. I.
U.S. 6	4040	Fall River	Providence, R. I.
138	1241	Fall River	Newport, R. I.
1A	336	Salisbury Beach	Hampton Beach, N. H.
U.S. 1 & 110	1264	Newburyport-Amesbury	Portsmouth, N. H.
28	360	Lawrence	Manchester, N. H.
U.S. 3	959	Lowell	Nashua, N. H.
119	121	Ashby	Rindge, N. H.
12	159	Winchendon	Fitzwilliam, N. H.
10	264	Northfield	Hinsdale, N. H.
U.S. 5	882	Greenfield	Brattleboro, Vt.
8	62	North Adams	Heartwellville, Vt.
U.S. 7	1139	Williamstown	Pownal, Vt.
96	640	Williamstown	Petersburg, N. Y.

REPORT OF THE DIVISION ON THE NECESSARIES OF LIFE

RALPH W. ROBART, *Director*

AUTHORIZATION

CHAPTER 410.—*An act establishing in the Department of Labor and Industries a Division on the Necessaries of Life, and vesting the Director of said division with certain powers in the event of a fuel emergency.*

Whereas, The deferred operation of this act would in part defeat its purpose to continue with as little interruption as possible the work of the special commission on the necessaries of life, which expired by limitation on the first day of May in the current year, therefore it is hereby declared to be an emergency law, necessary for the immediate preservation of the public convenience.

Section 1. Section three of chapter twenty-three of the General Laws, Laws as amended by section two of chapter three hundred and six of the acts of nineteen hundred and twenty-one, is hereby further amended by inserting after the word "standards" in the eighth line the words:—, a division on the necessaries of life,—so as to read as follows:—Section 3. The commissioner shall be the executive and administrative head of the department. He shall have charge of the administration and enforcement of all laws, rules and regulations which it is the duty of the department to administer and enforce, and shall direct all inspections and investigations except as otherwise provided. He shall organize in the department, a division of standards, a division on the necessaries of life and such other divisions as he may from time to time determine, and may assign the officers and employees of the department thereto. He shall prepare for the consideration of the assistant commissioner and the associate commissioners rules and regulations for the conduct of the department and all other rules and regulations which the department is authorized by law to make, and they shall, except as otherwise provided, take effect when approved by the associate commissioners and the assistant commissioner, or upon such date as they determine. The commissioner may designate the assistant commissioner or an associate commissioner to discharge the duties of the commissioner during his absence or disability.

Section 2. Section four of said chapter twenty-three as most recently amended by chapter two hundred and seventy-five of the acts of nineteen hundred and twenty-seven, is hereby further amended by striking out, in the fourth line, the word "five" and inserting in place thereof the word:—six,—and by inserting after the word "standards" in the seventh line the following:—,and one of them, to be known as the director of the division on the necessaries of life, shall have charge of said division,—so as to read as follows: Section 4. The commissioner, assistant commissioner and associate commissioners may, with the approval of the governor and council, appoint and fix the salaries of, not more than six directors, and may, with like approval, remove them. One of them, to be known as the director of standards, shall have charge of the division of standards, and one of them, to be known as the director of the division on the necessaries of life, shall have charge of said division, and each of the others shall be assigned to take charge of a division. The commissioner may employ, for periods not exceeding ninety days, such experts as may be necessary to assist the department in the performance of any duty imposed upon it by law, and such employment shall be exempt from chapter thirty-one. Except as otherwise provided in section eleven, the commissioner may employ and remove such inspectors, investigators, clerks and other assistants as the work of the department may require, and fix their compensation. Such number of inspectors as the commissioner may deem necessary shall be men who, before their employment as such, have had at least three

years' experience as building construction workmen. The commissioner may require that certain inspectors in the department, not more than seven in number, shall be persons qualified by training and experience in matters relating to health and sanitation.

Section 3. Said chapter twenty-three is hereby further amended by inserting after section nine C, inserted by section one of chapter three hundred and fifty-seven of the acts of nineteen hundred and twenty-nine, under the heading "DIVISION ON THE NECESSARIES OF LIFE", the following five new sections:—Section 9D. The director of the division on the necessaries of life shall, in addition to the powers and duties conferred and imposed upon him by law, perform such other duties as may be assigned to him by the commissioner.

Section 9E. The division shall study and investigate the circumstances affecting the prices of fuel, gasoline and refined petroleum products and other commodities which are necessaries of life. It may inquire into all matters relating to the production, transportation, distribution and sale of the said commodities, and into all facts and circumstances relating to the cost of production, wholesale and retail prices and the method pursued in the conduct of the business of any persons, firms or corporations engaged in the production, transportation, or sale of the said commodities, or of any business which relates to or affects the same. It shall also study and investigate the circumstances affecting the charges for rent of property used for living quarters, and in such investigation may inquire into all matters relating to charges for rent.

Section 9F. The division shall have authority to give hearings, to administer oaths, to require the attendance and testimony of witnesses and the production of books and documents and other papers, and to employ counsel. Witness summonses may be issued by the director or by any assistant by him designated and shall be served in the same manner as summonses for witnesses in criminal cases issued on behalf of the commonwealth, and all provisions of law relative to summonses issued in such cases shall apply to summonses issued hereunder, so far as they are applicable. Any justice of the supreme judicial court or of the superior court may, upon application of the director, compel the attendance of witnesses and the giving of testimony before the division in the same manner and to the same extent as before said courts.

Section 9G. The division shall investigate all complaints made to it, and may publish its findings. It shall keep in touch with the work of federal and municipal and other agencies dealing with the necessaries of life, and give them such assistance as it deems advisable; and may invoke the aid of said agencies and of civic and other organizations.

Section 9H. Whenever the governor shall determine that a fuel emergency exists, he may with the approval of the council, by a writing signed by him, designate the director of the division on the necessaries of life to act as an emergency fuel administrator, and thereupon the director shall have, with respect to fuel, all the powers and authority granted by the Commonwealth Defence Act of nineteen hundred and seventeen, being chapter three hundred and forty-two of the General Acts of nineteen hundred and seventeen, to persons designated or appointed by the governor under section twelve of said chapter three hundred and forty-two; and the governor may revoke such written authority at any time. The provisions of said chapter three hundred and forty-two are hereby made operative to such extent as the provisions of this section may from time to time require.

Section 4. Section fourteen of chapter one hundred and forty-nine of the General Laws is hereby amended by adding at the end thereof the following:—The commissioner shall also include in his report such data as to the work of the division on the necessaries of life as he may deem advisable.

Section 5. The unexpended balance of any sum heretofore appropriated

for the use of the special commission on the necessaries of life, appointed under chapter three hundred and twenty-five of the acts of nineteen hundred and twenty-one, and from time to time extended, shall be available for expenditure by the division on the necessaries of life hereby established, which shall in all respects be the lawful successor of said special commission and shall be entitled to receive all books, papers, documents, records and other data in the possession of said commission at the time its existence is terminated. (Approved May 29, 1930.)

Summary of Activities

Introductory

The division on the necessaries of life was established by the General Court after a Special Message from Governor Frank G. Allen in May, 1930, and became a law on May 29, 1930. This division assumed the activities and services of the former commission on the necessaries of life, which expired on May 1, 1930, after an existence of eleven years. In this connection it was fortunate to inherit the complete records and statistics compiled by the commission and to start off with a trained personnel, all of whom had at least six years experience. As the new division was vested with the same powers and duties as its predecessor, the first task was to bring all statistical data and surveys up-to-date, as a month had elapsed between the expiration of the commission and establishment of the new division. This was accomplished without serious delay to the agencies served or the public service in general.

The duties of the division are briefly: to study and investigate the circumstances affecting the prices of fuel, gasoline, refined petroleum products, food, clothing and other commodities which are necessaries of life and the charges for rent of property used for dwelling purposes. It is required to investigate all complaints received and may publish its findings.

Authority to issue summons for the production of books and other records, to administer oaths, to hold public hearings and to publish findings, gives this division very broad powers. While it is rarely necessary to invoke these powers, without them the division would be seriously handicapped in rendering effective service. It relies entirely upon moral suasion and publicity for the enforcement of recommendations and suggestions.

In a fuel emergency, the director of the division, under the direction of the governor and council, acts as emergency fuel administrator, with increased powers, including the right to seize fuel.

During the six months' term ending November 30, 1930, a consumers' market has existed for the first time since the war. People with the wherewithal to purchase and the desire to shop around have been able to buy foodstuffs and clothing at greatly reduced prices. Notwithstanding these fluctuations in our retail prices, the division has been called upon to adjust difficulties in approximately 3,500 instances. This was due to abnormal conditions and unemployment, which prevented the consumer from adhering to contracts made prior to present conditions. Innumerable complaints of a diversified nature were made to the division, many of which were outside the legal scope of its activities. In each instance, however, an attempt was made to bring about an adjustment or temporary relief to the aggrieved. The division has endeavored, through friendly contact, particularly with retail installment houses, to forego or postpone any action that might seriously handicap the health and welfare of many of our citizens, who find they are temporarily unable to provide for themselves.

Definite complaints have been filed with the division on the prices of milk and bread, and investigations are now in progress with reference to

these prices. Prices charged for gasoline in Attleboro, Concord, Taunton, Worcester and other communities have been protested by individuals and civic bodies, and, with the exception of Worcester, which is now receiving the attention of the division, prices have been satisfactorily adjusted.

Special surveys of retail prices and living costs in Plymouth and Waltham are now about completed. Statistics relative to fuel, oil and other commodities and the "cost of living index" compiled by the former commissioner, have been continued and the information furnished the public and the trade. Special statistical data has also been furnished organizations and individuals upon request.

In view of the threatened anthracite strike on September 1, 1930, particular attention was given to the collection of information and statistics relative to our fuel situation. With accurate and current information available in regard to receipts, stocks and requirements of various fuels, Massachusetts was ready to take suitable action to protect herself had there been an actual emergency.

The division has enjoyed the hearty coöperation of many business interests, federal, state and municipal bureaus, for which it is grateful. The newspapers have been willing at all times to serve the division and the people of Massachusetts in the dissemination of news and the recommendations of the division and are to be commended for their public service in this regard.

Cost of Living Study

The cost of living index based on retail prices of commodities has been compiled and published monthly by the division. This index is based on 1913 prices and is a good barometer of the price trend of staple commodities. While changes have occurred in the relative importance of certain commodities, no changes have been made in the weights or allocations, as the principal value of an index is that of comparison.

The combined index showed a downward trend throughout 1930, and in November was about 6% below the corresponding month of 1929. Decreases were noted in all major sections of the budget.

The demand for these monthly releases from financial, labor, industrial and welfare organizations, colleges, libraries and individuals indicate the value of this phase of the division's work. The mailing list now includes over 200 names, some of whom receive additional copies.

Coal

The value of actual knowledge of fuel conditions in case of emergency was demonstrated on several occasions during the life of the former commission. Figures published by federal authorities contain only incomplete information concerning Massachusetts and New England, and statistics relative to receipts, stocks and deliveries are therefore necessary for a complete picture of our fuel situation. The division has, therefore, continued to compile and issue current statistics and special reports for the information of our dealers and consumers.

Chambers of commerce, railroads, industrial organizations, wholesale and retail dealers, governmental bureaus, and various organizations have been furnished much additional information relative to fuel upon request.

The pamphlet "Saving Fuel in Heating the Home," published by the former commission, was revised and printed by the division. During the Terecentenary Exposition on Governmental Activities at Boston and Springfield, about 4,000 copies of the pamphlet were distributed, and an additional 700 copies have been supplied to individuals upon request to this office.

Comparatively few fuel complaints have been received by the division, and all have received the prompt attention of the dealer when called to his attention.

Rent and Housing

Housing disputes and requests for information from landlords and tenants are an important part of the daily routine of the division. Many of these cases stir up much personal bitterness between the parties concerned, even though comparatively small amounts of money are involved in each case. Through investigation, private conference and suggestion by the division, the majority of cases received have been settled to the satisfaction of all concerned without the necessity of court action.

Due to general conditions with regard to unemployment, housing cases relating to vacate notices and non-payment of rent have materially increased. Tenants without means of meeting rental payments sought the aid of the division to prevent forced evictions, while landlords requested information as to the quickest way to remove non-paying tenants, as in many cases the rental was necessary to prevent loss of property. While powerless under the law to protect tenants owing rent, the division was able, through the aid of welfare, veteran and other organizations, to render real service and prevent undue suffering in many cases.

Other housing cases handled concerned lack of heat, water and other conveniences, leases, mortgages, storage, and various controversies between landlords and tenants.

The Boston Rent and Housing Committee was abolished this year. This materially increased the number of housing cases received, as all Boston complaints were formerly handled through that office.

The pamphlet "The Relations of Landlord and Tenant," prepared by the former commission, was revised and published by the division. This summary concerning the respective rights and duties of both landlords and tenants has received many favorable comments, and about 3,000 copies have been distributed by the division.

Miscellaneous

The division is required by law to investigate all complaints made to it, and, in the absence of other governmental agency, has received and adjusted a great variety of cases, many of which could not be considered strictly necessaries of life.

Individual cases handled by the division include wage attachments, cleansing and laundry services, financing charges, foreclosures, gasoline, milk, clothing, jewelry, pianos, sewing machines, installation of heating apparatus, furniture, etc. The coöperation and support of the trade generally has been received in clearing up these misunderstandings between dealers and consumers.

A material increase has been noted in the number of partial payment troubles brought to the attention of the division. Discontinuance of weekly payments by buyers unemployed or on part-time employment resulted in most drastic and inhuman methods on the part of some merchants. Wage attachments placed against buyers with reduced income have compelled almost impossible demands before being released, and many employers have aided these agreements by threats of loss of position if bills were not paid. Threatened foreclosure in furniture and taking of jewelry and other items of value as security were other methods employed to force payment. Most dealers have accepted the suggestions of the division regarding agreements for future payments, but others do all in their power to collect what is due, regardless of the financial condition of the debtor.

From the experience of the division, the present law relative to attachment of real wages works a hardship in innumerable cases. Under this law only $10.00 is exempt from attachment "for necessaries," which, in most cases, is not sufficient to pay rent and buy actual essentials.

In many cases workers are compelled to pay questionable bills, as they are either not financially able to stand a series of attachments before dis-

position of the claim by the courts or do not wish to lose their positions.

In the handling of these miscellaneous complaints, the division has endeavored to promote friendly relations between the parties concerned and made suggestions which would result in the fair and amicable adjustment of these cases.

Trend of Living Costs

The Division has continued the study and investigation of the circumstances affecting living costs, including the compilation and publication of the "cost of living" index for Massachusetts. Due to wide public interest in this index, the activities of the former commission are included in this section of the report.

In the twelve months ending November 30, 1930, the combined cost of living index dropped from 160.7 to 151.2, decreases being noted in all major sections of the budget. Comparative figures by months for 1929 and 1930 are given below:

Cost of Living Index—1913-100

Month	*1929*	*1930*
January	160.5	159.4
February	159.0	158.9
March	160.0	157.0
April	159.8	157.1
May	160.2	156.4
June	159.6	155.0
July	161.1	154.2
August	162.5	153.7
September	161.9	153.9
October	161.7	153.4
November	160.7	151.2
December	160.6	

To give a better understanding of these figures, they may be transposed into currency, for example: in November, 1930, $151.20 was required to purchase a similar quantity of necessaries that cost $100 in 1913, compared to $160.70 in November, 1929, and $202.60 in July, 1920, the peak month.

The accompanying chart shows fluctuations in prices of the major elements and combined "cost of living" since 1916; in the period 1913 to 1916 only slight changes appeared in commodity prices. The purchasing power of the cost of living dollar increased over 6% during 1930. The difference between the increase in wages and the increase in the cost of essential things represents the actual advance in purchasing power, and while wages and savings of various groups have increased more than living costs, the general business depression of the past year has substantially decreased the purchasing power of many families through lowered income.

It is evident from the studies of the division and its predecessor that additional income is usually expended for so-called luxuries and conveniences to better living standards. The average American family is unquestionably better fed, better clothed, better housed and enjoys more conveniences and comforts than the average family in any country at any time in the history of the world. The desire to live as others do, however, has caused many families to maintain standards not warranted by their incomes, and the mortgaging of future income for luxuries and semi-luxuries has been a matter of much concern to both dealer and consumer during the past year when, in many instances, family incomes have been materially reduced. The division is being

continually called upon to assist merchants and consumers in their effort to effect new agreements, for payment of bills, which are fair to the dealer and will not cause hardship to the family of the buyer.

Comparative "Cost of Living"

The division has currently examined and studied living costs of other states, as compiled by the Federal Bureau of Labor and the National Industrial Conference Board for the purpose of comparison. While we are not directly concerned with the cost of living in other states, we are interested in learning how Massachusetts is fast overcoming its former cost of living handicaps. The following table for four large industrial cities, each from a different state, represents the cost of living increase in December, 1930, over the 1914 base.

Per Cent Increase over December, 1914, in Expenditures for Necessaries

	Food	Clothing	Rent	Fuel and Light	House Furnishings	Miscellaneous	All Items
Boston	36.7	72.6	44.7	95.7	107.6	92.3	59.2
Philadelphia	34.4	64.9	51.2	95.8	75.3	120.7	64.5
New York	35.9	82.2	63.1	90.9	85.5	123.7	67.5
Cleveland	29.5	52.1	55.3	162.5	75.5	124.2	66.2

It will be noted that the increase for Boston over 1914 was 59.2 per cent, while in the other large cities the increase ranged from 64.5 per cent to 67.5 per cent. Base prices and local condition in these cities probably differ and it is therefore, not practicable to use these figures to compare the cost of living between cities. They do at least serve as a good barometer of price changes since 1914, and show that a substantial differential exists in favor of Boston. In other words prices have increased less in Boston in 16 years than in the other three cities. Other cities of our commonwealth have a lower cost of living than cities of a similar size in the industrial states of New York, Pennsylvania and Ohio.

Industry determines the cost of living in the particular cities in which they are desirous of locating before arriving at a definite decision, and all information relative to local conditions is given proper consideration. Special cost of living surveys have been made by the division at the request of local chambers of commerce to determine the relative living costs and conditions in their communities. Reports of these studies show that it costs less to maintain a reasonable standard of living in cities of Massachusetts than the average of the other three states, and have proven of great value to communities in attracting new industries.

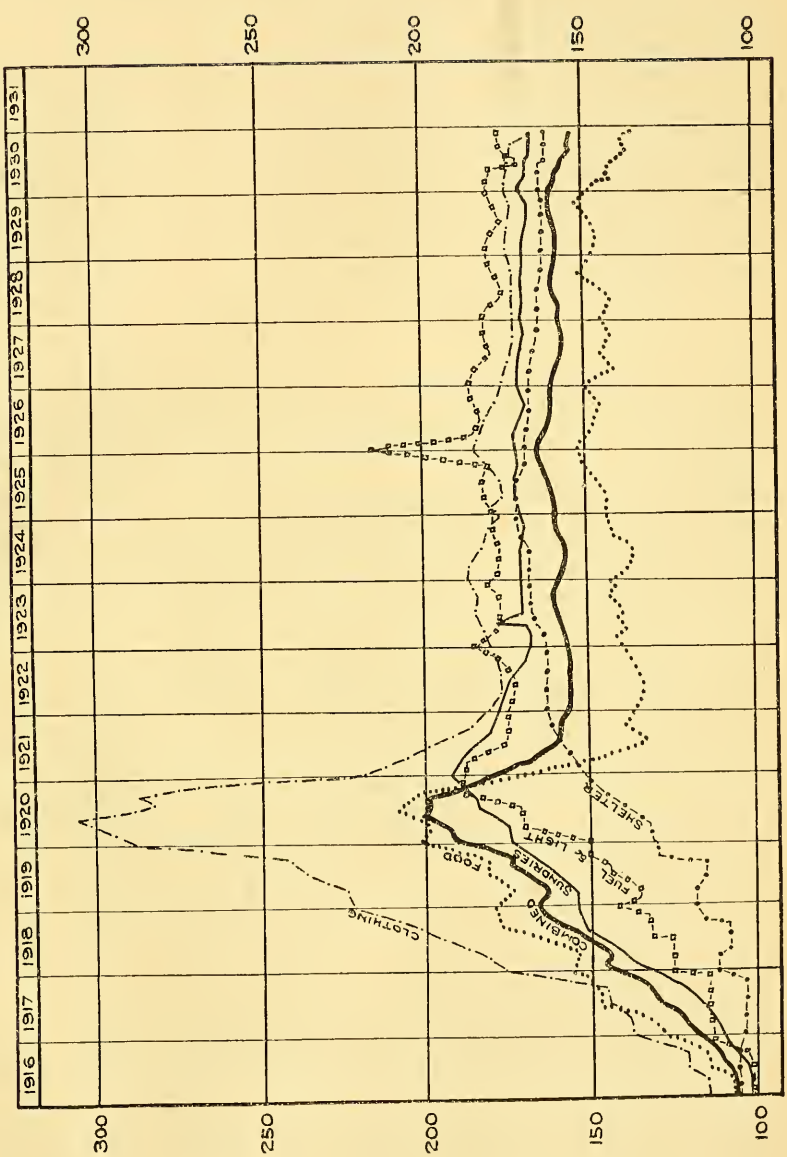
The former cost of living handicap suffered by Massachusetts has apparently been overcome. We hope that our merchants will continue to devise ways and means of lowering prices of basic commodities to the end that Massachusetts will continue to lead the way.

Gold Stocks

Whatever reasons may be given for the downward trend of commodity prices during the past year, neither the stock of gold nor the machinery of finance is claimed to be a factor. During 1930, gold stocks in the United States as reported by the Federal Reserve Bank increased from $4,367,000,000 on December 1st, 1929 to $4,571,000,000 on December 1st, 1930, or an advance of $204,000,000. Thus, it is evident that the supply of gold, which is the base of money, has increased while the price of commodities generally have fallen.

INDICES—MAJOR ELEMENTS—COST OF LIVING

1913 EQUALS 100



It is usually assumed that prices and gold stocks increase in about the same proportion. This anamoly is explained by the fact that money includes not only gold but metallic and paper currency and the relatively large item of bank credits. The demand for money as represented by bank credits has fallen materially during the year, due to the accumulated surplus of commodities brought about largely by the curtailed purchasing power of the masses.

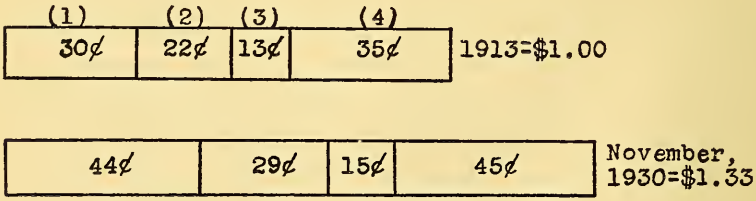
It is clearly evident that there is no shortage of money and the real problem rests squarely on the shoulders of business to utilize the money available in the banks. Of course, it is necessary to consider the element of safety and profitableness in this connection, but it should be borne in mind that in this period of readjustment, unlike others in the past, there is a sound financial foundation and a liquid credit. This situation, in a great measure, is due to the policies of the federal government and the federal reserve system and it will, undoubtedly, be of inestimable value in hastening the revival of greater business activity and future prosperity.

Elements of the Budget

Food

Food is the largest single item of expense in the typical family budget and is given a weighting of 43 per cent of total expenditures. The index for this item is based on retail prices of 37 staple food commodities collected monthly from chain and service stores throughout the state.

During 1930, the food index dropped about 11%—from 148.9 in December, 1929, to 132.9 in November, 1930. Lower food prices were largely responsible for the decrease in the combined "cost of living" index. the approximate division of the food dollar in 1913 and November, 1930, is given below:



(1) Combined meats
(2) Milk, butter, cheese, eggs.
(3) Flour, corn meal, bread, potatoes.
(4) Other food items.

Amount of money required in November, 1930, to purchase certain food commodities on 1913 base.

The index for combined meats dropped from 161.1 in December, 1929 to 148.6 in November, 1930, decreases being noted in prices of all meat products.

Prices of dairy and poultry products considered collectively decreased about 9% during the year. In November, 1930, 29c was required to purchase a similar combination of these items that cost 34c in December, 1929, and 22c in 1913. Milk prices were not reduced to the same extent as other products of this combination, a decrease of only about 1% being noted. The index number for eggs, butter and cheese dropped 25%, 14% and 8% respectively during this period.

In the flour, bread, corn meal and potato combination, a decrease of 29% was noted in the price of potatoes and 24% in the price of flour.

The cost of this combination in November, 1930, was only 2% above the 1913 total.

The combined index for "other food" decreased about 12% during the year, all items reflecting lower prices.

Monthly index numbers of combined food for 1929 and 1930 are given below:

	1913 Equals 100	
Month	*1929*	*1930*
January	148.5	146.4
February	146.5	145.8
March	147.6	141.9
April	147.7	142.1
May	149.1	141.7
June	148.1	139.3
July	151.8	137.6
August	154.7	136.6
September	153.0	137.2
October	152.1	137.0
November	149.3	132.9
December	148.9	

The food index for November was at the lowest level since March of 1917, with many individual items being below the 1913 level.

The average housewife, through the medium of radio educational broadcasts, has become a well-informed authority on the selection and preparation of the daily menu, and it is apparent that quality and food value have to a large extent replaced demand for the largest quantity at the lowest cost. While expenditures for food vary according to the income, diet and size of the family, they are also influenced by intelligent selection for the family market basket.

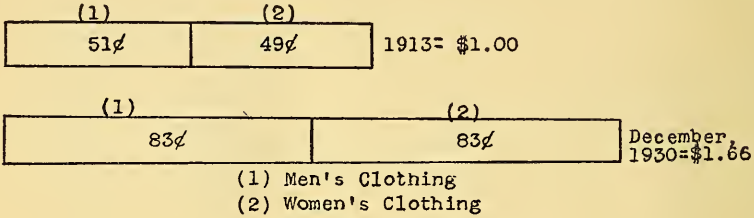
Under the present method of distribution, food is usually purchased in small lots daily with a growing tendency to depend, to a large extent, upon prepared foods. Canned vegetables and fruit, bakery products, cooked or partly cooked meats and other foods are consumed in increasing quantities in urban homes. Dealers, therefore, have been obliged to assume greater responsibilities, and stores, warehouses and cold storage plants must be conveniently located to provide a regular daily flow of food products to the consumer throughout the year. Further extension of chain store outlets has resulted in fairly uniform prices being established for staple food products throughout the State, with the consumer being given the benefit of lower prices through mass distribution.

Clothing

Clothing is the most difficult item of the budget to standardize, as expenditures in this section are largely based on individual requirements and tastes, and are also affected by constantly changing styles. Indices for clothing are, therefore, usually based on the so-called sampling method or on prices of staple goods entering into the cost of wearing apparel.

The index of combined clothing decreased about 5% during the year, from 174.0 in December, 1929, to 165.5 in November, 1930. Lower prices were noted for all items included in this section of the budget. Price reductions for ready-to-wear clothing articles, dresses, and various specialties in popular demand not included in the budget have been even more pronounced than for the more staple items upon which the budget is based. In many cases the prices charged for ready-made clothing having no relation to the cost of cloth entering into their man-

ufacture. Many garments now in popular demand were either unknown or considered as luxuries a few years ago by the great mass of the consuming public. The approximate division of the 1913 clothing dollar and the amount of money required to purchase a similar quantity of clothing in November, 1930, is shown in the following chart:



(1) Men's Clothing
(2) Women's Clothing

Due to keen local competition, prices of ready-made clothing show wide variations even within communities. Clothing made from similar fabrics but tailored by different manufacturers can be purchased at a wide range of prices, a large assortment being regularly carried in stock by most stores. Consumers who know values and are willing to "shop around" are, therefore, afforded the opportunity to save money on clothing purchases.

The production of shoes and textiles are two of the principal industrial activities in New England; therefore, prices of clothing and shoes should not be excessive in Massachusetts. However, importation of clothing and textiles from foreign countries and competition from southern mills having a lower wage scale have created serious problems which must be met by our industries. In this connection, an effort should also be made to develop the manufacture of clothing on a larger scale in Massachusetts, as ready-made clothing is being purchased in increasing quantities.

Massachusetts industries can and should supply a larger share of clothing articles to our home markets. However, this can only be accomplished by intelligent understanding and aggressive action on the part of industrial leaders.

Shelter

The division allows 17.7% of total budget expenditures for the shelter section, exclusive of heating costs and car fares, which are included in other sections. Many families, however, pay a higher percentage of their income for rent as the general increase in living standards has made better living quarters desirable and necessary.

Housing conditions in the commonwealth have been closely followed by the division and its predecessor through activities in thousands of individual disputes between landlords and tenants. A general outline of the Division's work in this respect is included in the summary of activities of this report.

Charges for rented property did not advance as rapidly during and immediately following the war as did the prices of food, clothing and other commodities, but the upward trend continued after prices of other necessaries had started to decline. Property values which were exceedingly inflated because of the housing shortage and high construction costs have been gradually decreasing, and during the last five years there has been a slow downward trend in the shelter section. During 1930, this index dropped from 163.0 in December, 1929, to 161.0 in November, 1930.

The element of shelter involves selectivity. During the past year, with the exception of moderate-priced property, tenants willing to shop have been able to obtain apartments at a greatly reduced rental and still have accommodations equal to their established standard of living. A tenants'

market has existed for the first time since the war. Rents of new property have been necessarily high, owing to the high cost of construction and inflated prices charged home buyers.

People bought homes on the basis of represented income and usually with a small equity. The desire to own a home greatly over-shadowed the possibility of over-construction with the result that during the past two years, particularly the year 1930, many owners of the two-family type house have been required to rent their apartments at substantial reductions. The speculator, so essential in times of increased demand, has practically ceased construction, and we come to the close of the year with a somewhat stabilized real estate market.

The owners of multi-family dwellings, or what are commonly referred to as apartment buildings, have gone through a disastrous era. While the vacancies in 1928 and 1929 have been reduced materially, their occupancy is at rentals, in many cases, less than the carrying cost of the property. Owners desirous of protecting their equities have been forced to accept the tenants' terms. This type of shelter has undergone a vicious change. Owners of older apartments took advantage of the shortage in this type of demand and raised their rents equal to the amount charged for new construction, and, in many cases, disposed of the properties at prices based on these rentals rather than on assessed valuation. The accommodations are generally small, requiring a minimum amount of furniture, which can be moved at little inconvenience to the tenant. Therefore, as fast as new construction offered its facilities, they have been inclined to accept better accommodations at a small increased cost to them.

Electrical refrigeration was the first facility offered in new buildings and later installed in the older buildings. As new construction goes on, we find other modern conveniences attractive to this type of tenant with the result that older buildings have been required to gradually reduce their rentals to the 1921 level. This has been done at a tremendous financial loss to the owners most of whom purchased at a time when rents were inflated. A heated apartment occupant may be properly termed a transient, as the duration of their occupancy averages two years, at the end of which time they either purchase a home of their own or move to a new building with the afore-mentioned facilities.

The division is of the opinion that the year 1931 will witness the resumption of residential construction. An analysis of the yearly building demand in metropolitan Boston, as outlined by Mr. Walter H. Haker, Vice-President in the Construction & Finance Corporation, based on the 1930 federal census indicates that 8,010 new housing units are needed yearly to accommodate the influx to this area. The term "unit" is used in this instance as one-family house, one unit; two-family house, two units; 22-suite apartment, 22 units, etc.

During the year 1930, 4,154 units were provided in this area by new construction, or less than one-half of the normal demand. It can, therefore, be predicted that 1931 offers opportunities for the resumption of residential construction.

Real estate is now passing through price adjustments the same as other commodities. The market for real estate will become active again when the price has reached a level that will be protective for the conservative buyer. Real estate investments in the United States represent more than half of the entire wealth of the nation. Out of our total wealth, amounting to 380 billions of dollars, more than 200 billions of dollars are invested in lands and improvements; therefore, hundreds of thousands of people in the country today are watching the final outcome of the present price adjustments in real estate. Notwithstanding the many losses in real estate caused by inflated prices, we are of the opinion that it still remains our most staple commodity. Banks and mortgage houses have become

ultra-conservative during the past two years owing to the number of mortgages they have been required to foreclose, as indicated by the following table prepared from reports of the banking commissioner:

	Savings Banks	Co-operative Banks	Savings Departments of Trust Companies	Total
1921	$1,079,013.71	$76,059.70	$134,493.00	$1,289,566.41
1922	879,468.85	87,836.47	190,340.00	1,157,645.32
1923	299,542.14	45,182.93	54,311.00	399,036.07
1924	204,878.36	82,554.01	167,093.00	454,525.37
1925	241,734.41	178,336.86	280,571.00	700,642.27
1926	1,147,933.42	340,681.60	276,657.00	1,765,272.02
1927	2,004,033.48	1,158,870.37	402,624.00	3,565,527.85
1928	4,427,378.24	3,696,420.92	905,152.00	9,028,951.16
1929	9,157,694.00	7,242,131.00	1,456,689.00	17,856,514.00
1930	16,736,374.00	10,799,083.00	2,329,055.00	29,864,512.00

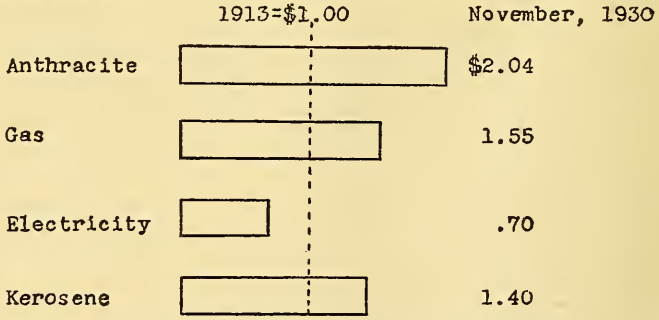
It will be noted that the banks of the commonwealth have increased their holdings by foreclosures over 26 millions of dollars since 1927 and it would indicate that from the total of foreclosures which, for the year 1930, were 9,443 or about 50 more than the previous year, the majority of foreclosures have been on over-financed apartment property.

The banks at the present time have ample money to loan on first mortgages, and we are assured that the future buyers of residential real estate will be protected by the intelligent appraisal of the value, and the placing of conservative mortgages.

Fuel and Light

The fuel and light section of the budget is given an allowance of 5.6% and is based on prices of anthracite coal (stove size), gas, electricity and kerosene combined under respective weights of 10, 2, 2, and 1. The index for this combination dropped during the year from 179.3 in December, 1929, to 175.4 in November, 1930, slightly lower prices being noted for anthracite, electricity and kerosene.

Considering the index number as the amount of money required to purchase a similar quantity of fuel that cost $1.00 in 1913, the following comparisons are shown:



As shown by these figures the price of anthracite, which has long been the dominating fuel for Massachusetts, is largely responsible for the fuel and light index remaining at a high level.

From surveys made by the division of various fuels, it appears that other fuels are growing competitors of anthracite, this being particularly true of coke during the past year. Coal dealers reported deliveries of 128,301 net tons of this fuel during the first eight months of the present coal year, compared to 91,660 net tons for the same period last year. Requests for information relative to the burning of coke and reports of gas companies indicate that it is fast becoming a popular fuel.

Anthracite deliveries of prepared sizes in Massachusetts amounted to 2,620,384 net tons during the period April 1 to December 1, 1930, or 446,956 tons less than for the same period of 1929. New England anthracite receipts of 7,632,863 net tons in the first eleven months of 1930 were 558,826 net tons below the 1929 figure.

A special survey started by the former commission and completed by the division to determine the relative importance of various fuels used in house heating also showed increases in all competing fuels. Comparative figures for the last two years are given below:

	1928-1929	1929-1930
Anthracite—Domestic Sizes	4,913,000 net tons	4,694,000 net tons
—Buckwheat Sizes	138,000 " "	160,000 " "
Bituminous Coal	495,000 " "	500,000 " "
Coke	637,000 " "	650,000 " "
Briquets	193,000 " "	190,000 " "
Oil	80,000,000 gals.	100,000,000 gals.
Gas Installations	2,925	4,344

The anthracite industry is devoted almost entirely to supplying coal for household purposes, with an annual production which about equals the demand. This almost stationary output has on several occasions been a matter of much concern to the people of New England when suspension of mining operations or interference with transportation have reduced the available supply.

On August 31, 1930, the wage agreement between operators and miners in the anthracite industry expired, and, as it appeared that satisfactory arrangements might not be established in time to avoid the third mine walkout in a period of ten years, an extra effort was made by the division to have all available data prepared to face any emergency. The new working agreements were reached, however, in time to avoid any further suspension.

The loss of anthracite tonnage to New England, and particularly to Massachusetts during the past three years, the increase in delivery of competing fuels and increased use of foreign coal has evidently been of much concern to local retailers, wholesalers and even operators, for statistics compiled by the division have been in great demand.

With regard to anthracite imports, which have increased from 483,979 net tons in 1929 to 596,881 net tons for the 11 months of 1930, it appears that low mining costs and freight to tidewater, plus cheap water transportation make it profitable to transport high quality fuel over 3,000 miles and place it on the market at a price comparable with that charged for Pennsylvania anthracite f. o. b. our harbors. The following table shows the importation of foreign fuels for the last three years and 11 months of 1930.

Massachusetts Importation of Foreign Fuels—Net Tons

	Anthracite	Briquets
1927	63,137	55,044
1928	307,796	69,618
1929	321,975	77,733
1930 (11 months)	345,160	42,979

Retail prices of foreign anthracite are based on prices charged for the American product, and while this foreign competition has undoubtedly resulted in more attention being given the preparation of Pennsylvania coal for this market, it has had no effect on prices.

Anthracite is one of the few commodities in common use on which little or no decrease in price has occurred during the past year. While it realizes that many elements enter into the retail prices charged for this commodity, the division believes that ways and means should be

devised at once to give the consuming public the benefit of lower prices.

In its reports of 1928 and 1929, the commission urged the industry to consider certain specific suggestions for the good of both the industry and the consumer. Satisfactory results have been obtained on one of these suggestions, and the special anthracite tax is in the process of repeal at the rate of one-third each year, making its repeal complete in June, 1931.

Action on another of these recommendations will undoubtedly receive the attention of the Interstate Commerce Commission in the near future, as complaint has been filed with that commission relative to high anthracite freight tariffs to New England with a view of reduction of these rates. While the division had no active part in the preparation of this complaint, all possible assistance has been given the complainants and an active part will be taken when the case is set for hearing.

As conditions in both the anthracite and bituminous coal industries have been discussed in much detail in reports of the former commission, only a brief statistical summary is given in this report. Tables showing production, New England receipts, exports, imports, Massachusetts deliveries and stocks on hand of anthracite are given in the appendix, and various other information is available upon request.

Sundries

The miscellaneous assortment of goods and services necessary for the operation of a home and not elsewhere specified are combined under the sundries section of the budget and given a weight of 20% of the total.

The amount of money available for these miscellaneous expenses is a good barometer of the standard of living a family is able to maintain. While Canada with an allotment of 19% for this section is only slightly less than this country, it is reported that in Great Britain, France and Italy only 4%, 10% and 13% respectively, are available for these items. In other words, the average family in European countries pay such a large share of the income for food, fuel, housing and clothing that little is left with which to improve living conditions.

The list of articles developed by the National Industrial Conference Board, with the addition of ice, is used by the division in its sundries section, and prices are checked for application to Massachusetts. This list includes:

Furniture and household supplies.
Carfares
Candy, soft drinks, etc.
Recreation, theatres, etc.
Reading material, stationery, telephone calls
Medical care, drugs, toilet articles, etc.
Dues and insurance
Contributions to church and charity
Tobacco
Ice

During 1930 the combined sundries index dropped from 169.2 in January to 165.6 in November, decreases being noted in prices of the majority of articles included in this section of the budget.

The wide-spread extension of easy credit provided by various partial payment plans has frequently resulted in the buying of goods beyond the capacity to pay and it has been necessary for many families to practice strict economy to meet the demands of creditors. During the past year, when family incomes have been materially reduced and in many cases completely discontinued, it has been impossible for a large number of consumers to continue to meet the obligations of leases on purchases made

on this plan and large numbers of individuals have sought the advice and assistance of this division in ironing out their financial troubles. In most cases, the division has been able to assist in these matters and has in general received the coöperation of the trade.

In connection with many of these cases, the division found that practices of certain dealers and collection agencies through the attachment of wages caused undue hardship in many cases, and therefore, recommends that the present law relative to wage attachments be amended to exempt $20.00 from attachment made "for necessaries". This will prevent undue suffering in the family of the debtor until the claim can be disposed of on its merits.

While a limited amount for insurance is the only allowance made for savings in the sundries section, the success or failure of the family organization is usually indicated by this important item. The report of the State Commissioner of Banks shows that savings departments in savings and coöperative banks and trust companies have increased from $2,793,000,000 in 1929 to $2,876,000,000 in 1930. This record of savings during a year of marked depression indicates that there are many thrifty families in Massachusetts who realize the importance of saving a part of the income as an insurance against old age and illness. The division believes that intelligent management of expenditures is as essential to the family organization as it is to business, and no substitute can be found for thrift as the foundation of success.

Petroleum Products

The study and investigation of the circumstances affecting the prices of petroleum products are included in the specified duties of the division.

Retail prices of gasoline were slightly lower throughout the year than in 1929. Posted prices in November were 13.5 cents tank wagon, and 15.5 cents service station, tax included, compared to 18 cents tank wagon and 20 cents at service stations in the same month of the previous year. Consumers have been able to purchase this product, however, from independent dealers at from 2 to 4 cents below the posted price of the large distributors.

Several complaints were received by the division relative to tank wagon differentials which existed between certain cities and towns and nearby communities with claimed discrimination against dealers paying the high prices. These irregularities were discontinued in Attleboro, Taunton, Concord and other communities after investigation by the division. Complaints recently received from the city government and chamber of commerce of the city of Worcester are now under investigation.

The production of crude oil, which amounted to 828,384,000 barrels during the first 11 months of 1930, was 96,880 barrels below the 1929 figure of the same period. The price of 35.0° to 35.9° gravity oil was $1.40 per barrel in June and $.92 per barrel in November, compared with $1.17 and $1.40 in the same months of 1929.

Indicated production and consumption of crude oil for the last five years and 11 months of 1930 are given below:

Crude Oil—United States *(In barrels of 42 gallons)*

	Production Plus Imports	Deliveries Plus Exports
1925	817,857,000	603,099,000
1926	826,824,000	630,611,000
1927	959,512,000	662,008,000
1928	979,947,000	738,463,000
1929	1,084,518,000	793,041,000
1930 (11 mos.)	885,784,000	696,519,000

Note: Does not include California consumption.

Conservation of crude oil has been materially increased through the substantial increase in the yield of gasoline from crude run to stills and the mechanical construction of automobiles to increase the mileage per gallon.

Both production and consumption of gasoline during the first 11 months of 1930 exceeded the 1929 figure. Indicated production and consumption for the last 5 years and 11 months of 1930 are shown in the following table:

GASOLINE—UNITED STATES *(In barrels of 42 gallons)*

	Production Plus Imports	Domestic Demand Plus Exports
1925	261,897,000	253,809,000
1926	299,488,000	299,825,000
1927	335,437,000	341,144,000
1928	381,479,000	381,729,000
1929	443,109,000	434,060,000
1930 (11 mos.)	423,145,000	427,572,000

The growing demand for motor fuel is largely due to the growth in the use of the automobile, which has become an important factor in the everyday life of the individual and all industry. The consumption of gasoline during the past year would, in all probability, have shown a much larger increase but for the period of depression which existed.

The total registration of motor vehicles in Massachusetts, including trucks, busses and motorcycles showed a slight decrease from the previous year. Total registrations in Massachusetts during the last ten years are shown in the following table:

1921	360,732
1922	449,838
1923	482,645
1924	672,315
1925	764,338
1926	826,224
1927	828,352
1928	875,595
1929	1,025,000
1930	1,013,819

The state department of taxation reports a revenue of $10,714,665.69 in 1930 from the 2c. per gallon tax on all gasoline sold in Massachusetts, an increase of about $1,500,000 over the previous year.

An increase was noted in the use of oil for house heating. Dealers reported deliveries of about 100,000,000 gallons during the 12 months ending March 31, 1930, or about 20 million gallons more than for the previous coal year. Prices to householders of 9c. per gallon for 38° to 40° gravity furnace oil and 6½c. to 7½c. per gallon for 28° to 32° gravity light fuel oil were at about the same level as the previous year.

CONCLUSIONS AND RECOMMENDATIONS

The division has continued its activities as a fact-finding and advisory agency for the public in regard to the prices of commodities in common use. Public investigation and report is usually an effective way of dealing with price questions, the solution of which rests upon basic and fundamental laws of economics rather than legislation. In the past, the division's policy has been to conduct cost of living surveys in cities soliciting them. The director feels that new industry might be encouraged

which would react to the benefit of the respective communities served, if a cost of living survey were conducted in each of our thirty-nine cities to the end that this information be available to government officials, chambers of commerce and other civic bodies upon request. Any act of this division which would eventually bring about increased production of Massachusetts commodities and thereby provide employment for our people and effect a reduction in our living costs would more than justify the effort and expense involved. It is requested that an additional sum of money to carry out this recommendation be authorized by supplementary budget to be used if and when the circumstances warrant.

Another problem that is confronting the people of our Commonwealth, which for the moment affects the class termed as "home owners" is the matter of taxation on real estate. This division realizes that it is necessary for someone to own a home before provisions are made for the vast majority of our people in the element of shelter. It is a laudible ambition to own a home, but under our present real estate tax laws no protection is offered the home owner in periods of depression. If the tenants are unemployed and unable to pay rent, taxes still continue. At the present time communities are almost entirely dependent upon real estate taxes for their operating revenue and the burden is so great that, in most instances, it is cheaper to pay rent than own a home. This division's only concern in this respect is to offer our conclusions in the hope that through study by some governmental agency, this most essential necessity of life will be provided for in the future. The director has made himself available to civic bodies and radio audiences on numerous occasions at which times the activities of the division were explained and many questions answered concerning the cost of living and the regulation of the family budget.

APPENDIX

Table 1.—Cost of Living Index Numbers by Elements.

1910

Elements	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
Food	94.8	94.7	95.9	95.5	94.9	95.3	96.4	96.9	97.3	96.7	96.5	92.9
Clothing	99.9	99.9	99.9	99.9	99.9	99.9	99.9	99.9	99.9	99.9	99.9	99.9
Shelter	91.0	91.0	91.0	91.0	91.0	91.0	91.0	91.0	91.0	91.0	91.0	91.0
Fuel and light	99.0	99.0	99.0	92.6	92.6	92.6	94.1	94.1	96.3	95.7	95.7	95.7
Sundries	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Combined	96.1	96.1	96.6	96.1	95.8	96.0	96.5	96.7	97.0	96.7	96.6	95.1

1911

Food	95.2	94.5	93.5	91.5	91.6	91.5	94.2	95.4	97.9	98.9	98.4	98.1
Clothing	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Shelter	91.0	91.0	91.0	91.0	91.0	91.0	91.0	91.0	91.0	91.0	91.0	91.0
Fuel and light	96.9	96.9	96.9	92.3	92.3	92.3	94.5	94.5	96.6	96.6	96.6	96.6
Sundries	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Combined	96.1	95.8	95.4	94.3	94.3	94.3	95.6	96.1	97.3	97.7	97.5	97.4

1912

Food	101.0	102.9	100.7	98.7	103.3	99.2	100.6	100.3	101.2	103.0	103.2	100.2
Clothing	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	99.8	99.8	99.8
Shelter	102.0	102.0	102.0	102.0	102.0	102.0	102.0	102.0	102.0	102.0	102.0	102.0
Fuel and light	97.6	97.6	101.2	101.8	101.8	97.5	97.5	97.5	99.6	103.9	103.9	103.9
Sundries	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Combined	100.7	101.5	100.7	99.9	101.9	99.9	100.4	100.3	100.8	101.9	101.9	100.6

Table 1.—Cost of Living Index Numbers by Elements—Continued.

1913

Elements	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
Food	98.2	96.9	97.9	99.7	99.3	101.4	102.2	101.5	100.5	101.7	101.8	101.2
Clothing	99.7	99.7	99.7	99.7	99.7	99.7	99.7	99.7	100.9	100.9	100.9	100.9
Shelter	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Fuel and light	104.3	102.2	102.2	95.7	95.7	95.7	97.8	100.0	100.0	102.2	102.2	102.2
Sundries	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Combined	99.4	98.7	99.2	99.6	99.4	100.3	100.8	100.6	100.2	101.0	101.0	100.8

1914

Food	102.1	101.9	101.6	99.5	98.9	101.1	103.3	105.3	105.7	107.2	105.0	103.9
Clothing	101.5	101.7	101.7	101.7	101.7	101.7	101.7	101.7	102.0	103.3	103.3	103.3
Shelter	103.5	103.5	103.5	103.5	103.5	103.5	103.5	103.5	103.5	103.5	103.5	103.5
Fuel and light	101.9	101.9	101.9	95.5	95.5	95.5	97.3	99.5	99.5	99.5	99.5	99.5
Sundries	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Combined	101.8	101.8	101.6	100.4	100.1	100.6	102.1	103.1	103.3	104.1	103.2	102.7

1915

Food	103.2	101.1	98.5	99.4	100.6	100.3	100.7	99.7	101.0	102.7	104.2	103.0
Clothing	105.8	106.8	106.8	106.8	106.8	106.8	106.8	106.8	107.5	108.8	108.8	108.8
Shelter	104.1	104.1	104.1	104.1	104.1	104.1	104.1	104.1	104.1	104.1	104.1	104.1
Fuel and light	101.1	101.1	101.1	94.2	94.2	94.2	96.4	98.5	98.5	98.5	98.5	100.7
Sundries	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.5	101.0	101.3	101.5
Combined	102.9	102.1	101.0	101.0	101.5	101.4	101.7	101.4	102.2	103.2	103.9	103.5

Table 1.—Cost of Living Index Numbers by Elements—Continued.

1916

Elements	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
Food	105.5	106.5	107.2	108.8	110.0	113.3	112.4	112.1	116.0	117.3	122.2	124.7
Clothing	114.5	115.4	115.4	121.2	121.2	121.2	121.2	121.2	121.6	125.2	125.2	125.2
Shelter	105.3	105.3	105.3	105.3	105.3	105.3	105.3	105.3	105.3	105.3	105.3	105.3
Fuel and light	101.3	101.3	101.3	101.3	99.2	101.3	101.0	102.9	102.9	106.9	113.3	113.3
Sundries	102.0	102.3	102.5	103.0	103.3	103.5	104.0	105.0	106.0	107.0	108.0	109.0
Combined	105.7	106.3	106.7	108.2	108.7	110.3	109.9	110.1	112.1	113.6	116.2	117.5

1917

Food	126.2	129.1	132.0	137.5	142.1	147.5	142.9	143.6	149.3	153.1	153.8	155.7
Clothing	137.7	137.7	138.9	138.9	138.9	145.0	145.0	145.0	145.6	159.9	159.9	159.9
Shelter	103.1	103.1	103.1	103.1	103.1	103.1	103.1	103.1	103.1	103.1	103.1	103.1
Fuel and light	113.2	113.2	113.2	114.7	114.7	114.7	114.7	114.7	114.7	114.7	114.7	114.7
Sundries	110.0	110.0	112.0	113.0	114.0	116.0	117.0	119.0	122.0	124.0	128.0	130.0
Combined	119.6	121.1	122.7	125.3	127.5	131.0	129.3	130.0	133.1	137.1	138.2	139.6

1918

Food	155.8	159.3	154.4	150.9	155.9	162.6	165.2	170.5	178.3	179.0	180.3	183.1
Clothing	176.5	180.4	180.6	193.6	193.6	193.6	201.3	201.3	202.4	209.4	209.4	209.4
Shelter	111.7	111.7	111.7	108.2	108.2	108.2	108.2	108.2	108.2	116.4	116.4	116.4
Fuel and light	125.3	125.3	125.3	125.3	125.3	125.7	132.1	132.1	132.1	132.6	133.8	143.1
Sundries	134.0	136.0	140.0	143.0	146.0	150.0	151.0	152.0	153.0	154.0	155.0	155.0
Combined	144.6	147.0	145.7	145.0	148.7	152.4	155.1	157.6	161.3	164.2	165.0	166.1

Table 1.—Cost of Living Index Numbers by Elements—Continued.

1919

Elements	January.	February.	March.	April.	May.	June.	July.	August.	September.	October	November.	December.
Food	180.1	174.2	174.1	176.6	179.7	181.0	182.2	187.4	182.0	184.7	188.9	189.1
Clothing	221.5	223.5	223.8	235.3	235.8	235.8	235.8	237.2	240.9	256.3	271.6	272.3
Shelter	118.4	118.4	118.4	115.5	115.5	115.5	115.5	115.5	115.5	129.6	129.6	129.6
Fuel and light	143.1	135.1	135.1	135.7	140.0	144.3	145.8	150.1	150.1	150.7	152.9	153.5
Sundries	155.0	155.0	155.0	156.0	158.0	160.0	163.0	165.0	167.0	172.0	175.0	175.0
Combined	167.5	164.7	164.7	167.0	169.1	170.3	171.5	174.6	173.1	179.9	184.5	184.7

1920

Food	200.9	195.5	198.9	198.2	207.9	207.9	216.9	205.1	202.5	194.7	187.2	179.6
Clothing	286.2	291.3	299.8	305.5	302.0	288.4	280.9	282.9	285.9	268.9	258.3	226.0
Shelter	131.0	131.0	131.0	133.8	134.9	139.4	139.4	142.4	147.8	147.8	150.6	151.7
Fuel and light	154.2	160.7	161.6	170.8	171.1	171.7	172.1	175.0	188.5	189.2	190.0	189.9
Sundries	175.9	175.9	175.9	183.0	183.0	185.0	185.0	185.0	188.0	190.0	192.0	192.0
Combined	192.0	190.8	193.4	196.3	200.3	199.7	202.6	198.5	200.1	194.9	191.3	183.9

1921

Food	171.5	158.6	145.1	142.1	135.3	133.5	139.5	142.0	139.9	138.7	137.2	139.4
Clothing	219.9	214.4	208.2	206.5	201.6	197.1	191.8	187.1	186.7	186.2	187.6	186.1
Shelter	151.7	151.7	153.2	156.3	159.4	159.4	159.4	159.4	161.0	161.0	161.0	161.0
Fuel and light	188.8	188.3	187.5	177.4	176.8	176.1	175.9	175.9	175.4	180.9	180.0	180.5
Sundries	192.0	190.0	190.0	188.0	188.0	185.0	183.0	183.0	180.0	180.0	180.0	178.0
Combined	179.5	172.9	166.4	164.5	161.4	159.4	160.8	161.4	160.0	159.7	159.2	159.6

Table 1.—Cost of Living Index Numbers by Elements—Continued.

1922

Elements	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
Food	136.1	135.6	133.1	135.4	134.0	134.1	137.2	136.3	136.3	138.2	139.9	139.8
Clothing	180.1	179.2	176.9	176.5	176.1	176.5	176.1	174.9	177.6	178.4	179.1	179.4
Shelter	162.5	162.5	162.5	162.5	162.5	162.5	162.0	162.0	162.0	162.0	162.5	162.5
Fuel and light	174.9	174.9	173.7	172.8	172.8	172.7	172.0	172.9	177.0	182.6	184.5	184.8
Sundries	178.0	177.0	177.0	174.0	174.0	174.0	174.0	172.0	169.7	169.7	169.7	168.8
Combined	157.3	156.8	155.3	155.6	154.9	155.0	156.2	155.3	155.4	156.6	157.7	157.5

1923

Food	139.3	141.3	138.8	139.3	141.0	140.0	143.4	142.0	143.5	144.9	142.0	144.1
Clothing	178.0	182.2	182.8	184.0	183.2	184.1	182.1	182.2	183.4	185.9	187.0	186.1
Shelter	162.5	162.5	164.5	166.0	166.5	167.0	167.0	167.0	167.0	167.5	167.5	167.5
Fuel and light	184.8	184.2	178.2	178.6	177.5	177.4	178.2	177.0	177.7	181.6	182.1	181.7
Sundries	168.8	168.8	168.8	170.5	170.5	170.5	170.5	170.5	170.5	170.5	170.5	170.5
Combined	157.1	158.5	157.5	158.5	159.1	158.9	160.1	159.5	160.3	161.6	160.5	161.3

1924

Food	141.0	139.9	139.0	136.1	136.4	137.1	137.5	138.5	142.4	142.1	141.5	143.0
Clothing	186.8	187.4	186.0	184.9	183.3	181.6	181.4	178.8	180.6	180.1	178.4	181.2
Shelter	168.0	168.0	168.0	168.0	168.0	168.0	168.0	172.0	172.0	172.0	172.0	172.0
Fuel and light	178.4	178.6	178.8	177.1	177.0	177.2	177.5	177.4	179.6	179.3	179.5	179.6
Sundries	171.4	171.4	171.4	171.4	171.4	171.4	171.4	170.5	170.5	170.5	170.5	172.2
Combined	160.1	159.7	159.2	157.7	157.6	157.7	157.8	158.4	160.5	160.3	159.8	161.2

Table 1.—Cost of Living Index Numbers by Elements—Continued.

1925

Elements	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
Food	144.7	142.8	144.4	143.4	143.7	146.8	147.9	150.3	150.3	153.1	154.1	155.6
Clothing	177.9	177.6	181.6	181.2	180.8	182.3	182.1	180.7	181.1	181.5	182.1	186.6
Shelter	172.0	172.0	172.0	172.0	172.0	172.0	172.0	172.0	170.0	170.0	170.0	170.0
Fuel and light	179.9	180.0	175.6	175.7	175.7	176.6	178.5	181.2	181.2	181.2	186.4	197.4
Sundries	172.2	172.2	172.2	172.2	172.2	172.2	172.2	172.2	171.4	171.4	171.4	172.2
Combined	161.5	160.6	161.6	161.1	161.2	162.8	163.4	164.4	163.9	165.1	165.9	168.0

1926

Food	151.8	153.9	149.2	151.9	148.0	148.3	147.7	145.4	146.8	147.3	147.4	147.9
Clothing	184.5	181.7	182.3	179.2	180.3	181.2	178.6	178.7	177.0	177.7	177.5	177.5
Shelter	170.0	170.0	170.0	170.0	168.0	168.0	168.0	168.0	168.0	168.0	168.0	168.0
Fuel and light	214.6	198.0	183.3	181.4	181.9	182.0	183.3	184.4	184.4	185.2	185.7	185.5
Sundries	172.2	172.2	172.2	172.2	170.5	170.5	169.7	169.7	169.7	170.5	171.4	171.4
Combined	167.0	166.6	163.9	164.5	162.3	162.5	161.9	160.9	161.3	161.8	162.1	162.3

1927

Food	145.9	143.7	142.1	143.4	145.7	145.5	142.8	142.2	142.6	142.1	144.6	145.0
Clothing	176.1	176.3	175.1	175.0	173.9	173.3	170.2	171.6	172.5	172.1	172.8	172.8
Shelter	168.0	168.0	166.0	166.0	166.0	166.0	166.0	165.0	165.0	165.0	165.0	165.0
Fuel and light	185.4	185.3	184.6	181.6	178.5	178.4	179.0	179.3	181.5	181.5	181.5	181.4
Sundries	171.4	171.4	171.4	170.5	170.5	170.5	170.5	170.5	169.7	169.7	170.5	170.5
Combined	161.2	160.3	159.0	159.2	159.9	159.7	158.6	158.0	158.2	158.0	159.3	159.5

Table 1.—Cost of Living Index Numbers by Elements—Concluded.

1928

Elements	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
Food	145.4	144.2	142.2	144.6	146.1	144.6	148.6	149.3	152.7	150.0	149.0	147.6
Clothing	172.6	172.7	172.6	171.7	173.8	172.1	172.5	170.9	171.5	169.3	171.5	172.8
Shelter	165.0	163.0	165.0	165.0	165.0	165.0	165.0	163.0	163.0	163.0	163.0	163.0
Fuel and light	181.4	181.4	181.2	175.4	175.4	175.4	175.4	175.5	177.9	177.9	179.7	179.6
Sundries	170.5	169.7	169.7	168.8	170.0	170.0	170.0	170.0	170.0	170.0	170.0	170.0
Combined	159.6	158.9	158.0	158.4	159.6	158.7	160.5	160.3	161.9	160.5	160.5	160.0

1929

Food	148.5	146.5	147.6	147.7	149.1	148.1	151.8	154.7	153.0	152.1	149.3	148.9
Clothing	173.3	170.1	174.1	173.6	173.6	173.6	172.2	173.6	173.2	173.5	173.6	174.0
Shelter	163.0	163.0	163.0	163.0	163.0	163.0	163.0	163.0	163.0	163.0	163.0	163.0
Fuel and light	179.5	179.6	179.7	177.9	174.2	174.2	176.4	176.3	178.9	179.0	179.1	179.3
Sundries	170.0	169.2	169.2	168.9	168.9	167.9	167.7	167.7	167.7	168.4	169.2	169.2
Combined	160.5	159.0	160.0	159.8	160.2	159.6	161.1	162.5	161.9	161.7	160.7	160.6

1930

Food	146.4	145.8	141.9	142.1	141.7	139.3	137.6	136.6	137.2	137.0	132.9	130.8
Clothing	173.6	173.6	173.5	173.3	173.1	173.0	172.4	172.7	171.6	168.8	165.5	164.0
Shelter	163.0	163.0	163.0	163.0	163.0	161.0	161.0	161.0	161.0	161.0	161.0	160.5
Fuel and light	179.4	179.4	178.3	178.1	170.7	170.7	172.1	174.3	175.0	175.8	175.4	175.5
Sundries	169.2	168.1	167.2	167.2	167.0	166.9	166.5	165.7	165.7	165.3	165.6	165.0
Combined	159.4	158.9	157.0	157.1	156.4	155.0	154.2	153.7	153.9	153.4	151.2	149.9

Fuel Statistics

Table 2.—Anthracite—Total Production, New England Receipts, Exports, Imports.

(Net Tons)

	Production	New England Receipts	Total Exports	Total Imports
1916	87,578,000	10,715,000	4,660,000	6,000
1917	99,612,000	11,680,000	6,058,000	13,000
1918	98,826,000	13,621,000	4,970,000	37,000
1919	88,092,000	10,578,000	4,982,000	83,000
1920	89,598,000	11,255,000	5,294,000	32,000
1921	90,473,000	11,374,000	4,681,000	9,000
1922	54,683,000	6,471,000	2,649,000	233,000
1923	93,339,000	12,184,000	5,090,000	300,000
1924	87,927,000	10,611,000	4,035,000	116,000
1925	63,839,000	8,280,000	3,182,000	387,000
1926	85,454,000	10,612,000	4,036,000	814,000
1927	80,647,000	9,146,000	3,340,000	125,000
1928	76,746,000	9,376,000	3,347,000	384,000
1929	76,888,000	9,032,000	3,382,000	488,000
1930 (11 mos.)	63,798,000	7,633,000	2,352,000	605,000

Table 3.—Bituminous Coal—Total Production, New England Receipts, Exports, Imports.

(Net Tons)

	Production	New England Receipts	Total Exports	Tota Imports
1916	502,520,000	24,122,000	21,259,000	1,714,000
1917	551,791,000	23,504,000	24,043,000	1,414,000
1918	579,386,000	27,171,000	22,349,000	1,457,000
1919	465,860,000	18,182,000	20,127,000	1,012,000
1920	568,667,000	22,434,000	38,517,000	1,276,000
1921	415,922,000	17,188,000	23,140,000	1,258,000
1922	422,268,000	18,807,000	13,065,000	5,060,000
1923	564,565,000	23,684,000	20,454,000	1,882,000
1924	483,687,000	18,877,000	17,062,000	428,000
1925	520,053,000	21,313,000	17,459,000	598,000
1926	578,290,000	21,087,000	35,300,000	532,000
1927	520,684,000	22,426,000	18,025,000	606,000
1928	493,252,000	19,652,000	16,439,000	577,000
1929	526,361,000	21,310,000	17,877,000	491,000
1930 (11 mos.)	422,219,000	17,974,000	14,939,000	205,000

Table 4.—New England All-Rail Movement of Coal as shown by Number of Cars of Coal passing East through the Gateways.

(Daily Average)

Year	Anthracite				Commercial Bituminous			
	Boston & Maine	Boston & Albany	New York, New Haven & Hartford	Total	Boston & Maine	Boston & Albany	New York, New Haven & Hartford	Total
1921	169	74	207	450	87	66	125	278
1922	109	39	124	272	57	52	100	209
1923	186	75	217	478	97	105	129	331
1924	161	60	205	426	52	49	108	209
1925	126	46	167	339	77	61	135	273
1926	168	57	234	459	78	68	148	294
1927	140	50	210	400	74	62	135	271
1928	137	47	245	429	68	49	108	225
1929	134	43	222	399	74	60	121	255
1930 (11 mos.)	102	47	200	349	62	47	108	217

Table 5.—Deliveries of Domestic-sized Anthracite for Last Eight Coal years—The Commonwealth of Massachusetts.

Coal Year, April 1 to March 31	Net Tons
1922–1923	4,109,986
1923–1924	5,132,984
1924–1925	5,114,515
1925–1926	4,243,872
1926–1927	5,087,360
1927–1928	4,744,324
1928–1929	4,912,810
1929–1930	4,692,989
1930–1931 (8 months)	2,620,384

Population 1930 (United States Census) 4,250,104

Table 6.—Population, Number of Dealers and their Deliveries of Domestic-sized Anthracite for Certain Representative Municipalities of Massachusetts.

City or Town	Population (1930)	Number of Dealers	Deliveries (Net Tons)	
			1929–1930 (Coal Year)	1930–1931 (8 months of Coal Year)
Boston District*	1,619,616	119	1,918,692	1,098,605
Adams	12,697	5	14,398	8,665
Amherst	5,888	4	9,751	6,169
Brockton	63,797	15	45,875	23,136
Fall River	115,274	8	73,286	43,633
Fitchburg	40,692	7	30,946	17,287
Gloucester	24,204	5	34,026	20,043
Greenfield	15,500	5	22,740	14,017
Haverhill	48,710	14	64,031	32,808
Holyoke	56,537	6	53,199	32,106
Lawrence	85,068	27	93,056	54,727
Leominster	21,810	7	25,249	13,744
Lowell	100,724	21	87,812	40,448
Lynn	102,320	11	102,394	51,817
New Bedford	112,597	9	130,689	76,442
Newburyport	15,084	5	21,297	15,160
North Adams	21,621	8	28,058	13,333
Northampton	24,381	8	37,875	19,631
Norwood	15,049	6	23,512	14,154
Peabody	21,345	8	31,373	23,746
Pittsfield	49,677	10	72,411	42,728
Salem	43,353	15	71,413	40,182
Springfield	149,900	20	191,620	111,369
Taunton	37,355	4	38,084	19,725
Westfield	19,775	4	22,994	12,291
Woburn	19,434	6	28,530	15,321
Worcester	195,311	20	206,057	120,248

*Boston district includes the following municipalities: Arlington, Belmont, Boston Proper, Brighton, Brookline, Cambridge, Charlestown, Chelsea, Dorchester, East Boston, Everett, Hyde Park, Jamaica Plain, Malden, Mattapan, Medford, Melrose, Milton, Neponset, Newton, Quincy, Readville, Revere, Roslindale, Roxbury, Somerville, South Boston, Waltham, Watertown and Winthrop.